North Tyneside Council

Working in partnership with CAPITA

Hartley Cove to the River Tyne Coastal Strategy

Technical Report 5:

Strategic Environmental Assessment Environmental Report

August 2016

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Quality Management

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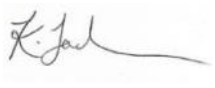
Prepared by 1	Katie Jackson *Environmental Consultant*	**Signature (for file)**	
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Rev	Date	Issue / Purpose/ Comment	Prepared	Checked	Authorised
P01.1	August 2015	S0 - Preliminary draft	K Jackson	-	-
P01.2	November 2016	S3 – Consultation draft for PM approval	K Jackson	H Carruthers	P Woods
P01.3	August 2016	S4 –Consultation draft for client approval	K Jackson	H Carruthers	P Woods

Invitation to Comment on this Report

This document forms the Environmental Report for the Strategic Environmental Assessment (SEA) of the Hartley Cove to the River Tyne Coastal Strategy.

The purpose of this report is to present information on the likely environmental effects of the draft Strategy as identified through: a review of other relevant plans and policies; a review of the environmental, economic and social baseline; and feedback following a series of consultation exercises with key stakeholders and the public.

A separate 'Non Technical Summary' document accompanies the Environmental Report, providing a brief synopsis of the assessment and its findings in non technical language.

This report is open to consultation for **5 weeks,** from **14th November** to **16th December 2016.**

Please send responses or comment on this consultation to:

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SEA Directive Requirements Checklist

Under EU Directive 2001/42/EC (the '*SEA Directive*') a Strategic Environmental Assessment (SEA) is required for certain plans and programmes which are likely to have a significant effect on the environment. A key output of this process is the production of the Environmental Report (this report) which must demonstrate that the SEA Directive's requirements have been met. For the purposes of clarity, the following table provides a checklist to the SEA Directive's requirements with regard to the content of the Environmental Report. Signposting is also used throughout to highlight the places in the report where information required by the Directive is provided.

Content Requirements for the Environmental Report[1]	**Section**
(a) An outline of the contents, ...main objectives of the plan or programme and ...relationship with other relevant plans and programmes;	Section 1.2 Section 2.2 Section 5 & Appendix A
(b) The relevant aspects of the current state of the environment and ...the likely evolution thereof without implementation of the plan or programme;	Section 6 Section 9.3[2]
(c) The environmental characteristics of areas likely to be significantly affected;	Section 6
(d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;	Section 7 & ***Appendix A*** ***(Coastal Strategy)***
(e) The environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and ...the way those objectives and any environmental considerations have been taken into account during its preparation;	Section 5 & Annex A Section 8
(f) The likely significant effects[3] on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors;	Section 9 & **Annex F**
(g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	Section 9 & ***TR 6*** ***(Coastal Strategy)***
(h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies and lack of know-how) encountered in compiling the required information;	Section 9.4 & Section 9.6
(i) A description of the measures envisaged concerning monitoring in accordance with Article 10;	Section 11
(j) A non-technical summary of the information provided under the above headings.	***Appendix C*** **(Coastal Strategy)**

[1] As identified in Article 5 and Annex I of the SEA Directive.
[2] A 'do nothing' option is maintained as an alternative for all Policy Units and provides an indication of the likely effects of not implementing any management policies along the coast
[3] These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

The table below provides details of additional requirements of the SEA Directive with regard to consultation, options development and monitoring. Relevant sections of this report which describe how these requirements have been met, along with associated technical reports, are signposted.

Process Requirements of the SEA Directive	Section
• Authorities with environmental responsibilities shall be consulted when deciding on the scope and level of detail of the information which must be in the environmental report. (Article 5(4)).	**Section 3.2, Section 4 & *Appendix D* *(Coastal Strategy)***
• Authorities with environmental responsibilities and the public shall be consulted to give them an early and effective opportunity, within appropriate time frames, to express their opinion on the draft plan and the accompanying environmental report before the adoption of the plan. (Article 6 (1) and (2)).	**TBC once finalised.**
• Other EU Member States shall be consulted where the implementation of the plan is likely to have significant effects on the environment of these countries (Article 7)	**N/A – no significant transboundary effects**
• The Environmental Report and the results of the consultations shall be taken account in decision making. (Article 8).	**Section 3.3, Section 9, Annex D, *TR6* & *TR9***
• When the plan is adopted, the public and any countries consulted under Article 7 must be informed and the following made available to those so informed: ○ The plan as adopted; ○ A statement summarising how environmental considerations have been integrated into the plan and how the Environmental Report of Article 5, the options expressed pursuant to Article 6 and the results of consultation pursuant to Article 7 have been taken into account in accordance with Article 8, and the reasons for choosing the plan as adopted, in the light of other reasonable alternatives dealt with; and, ○ The measures decided concerning monitoring (Article 9).	**TBC once finalised.**
• The significant environmental effects of the plan's implementation shall be monitored (Article 10).	**Section 11**

Contents

Annexes

1. Structure of Technical Reports

1.1.1 The Coastal Strategy developed for the North Tyneside coastline between Hartley Cove and the River Tyne, sets out the Council's defence management priorities for the coast.

1.1.2 The Strategy is presented as a series of reports, each dealing with a separate component of the plan along with a number of supporting Appendices.

Technical Report No.	Title
1	Executive Summary
2	Background
3	Coastal Processes
4	Existing Defences and Historical Expenditure
5	**Strategic Environmental Assessment - Environmental Report**
6	Options and Economic Assessment
7	Monitoring
8	Risk Assessment and Health and Safety Assessments
9	Public Consultation and Stakeholder Involvement
10	Glossary and References
Appendices	**Title**
Appendix A	Habitat Regulations Assessment
Appendix B	Water Framework Directive Assessment
Appendix C	Non-Technical Summary for the Strategic Environmental Assessment
Appendix D	Strategic Environmental Assessment Scoping Report

Technical Report 5: Strategic Environmental Assessment – Environmental Report

1.1.3 This technical report provides information on:

- The methodology adopted in conducting a Strategic Environmental Assessment (SEA) of the Coastal Strategy and the consultation which has taken place;
- The baseline environmental characteristics of the Strategy area and links to other international, national, regional and local plans, policies and programmes;
- Potential impacts of proposed coastal defence options on the environment and a comparison of the main strategic alternatives; and,
- Mitigation measures and monitoring where proposed.

1.1.4 A standalone non-technical summary accompanies this technical report and provides a précis of findings from the SEA process (see ***Appendix C*** to the Coastal Strategy).

1.2 Structure of the Environmental Report

1.2.1 A description of the structure and content of the Environmental Report is provided in Table 1.1 below.

Table 1.1 Structure and content for the Environmental Report

Structure of Report	Information to Include
Non-Technical Summary	• Summary of the SEA process; • Summary of the likely significant effects of the plan or programme • Statement on the different the process has made to date; and, • How to comment on the report.
Background	• Purpose of the SEA; and, • Objectives of the Coastal Strategy.
Methodology	• Approach adopted in the SEA; • Who has been consulted and when; and, • Difficulties encountered and limitations of the assessment.
Environmental Baseline	• Links to other international, national, regional and local plans and programmes, and relevant environmental objectives including how these have been taken into account; • Description of the baseline characteristics and predicted future baseline; • Environmental issues and problems; and, • Limitations of the data and assumptions made.
SEA Objectives	• Objectives of the SEA, assessment criteria and indicators.
Issues, Options and Assessment	• Main strategic alternatives considered and how they were identified • Comparison of the environmental effects of the alternatives; • Description of how environmental issues were considered in choosing the preferred options; • Other alternatives and why they were rejected; and, • Mitigation measures proposed.
Monitoring	• Proposals for monitoring.
Summary	• Summary of significant effects of the Coastal Strategy; and, • Summary of mitigation measures.

2. Introduction

The SEA Directive requires:

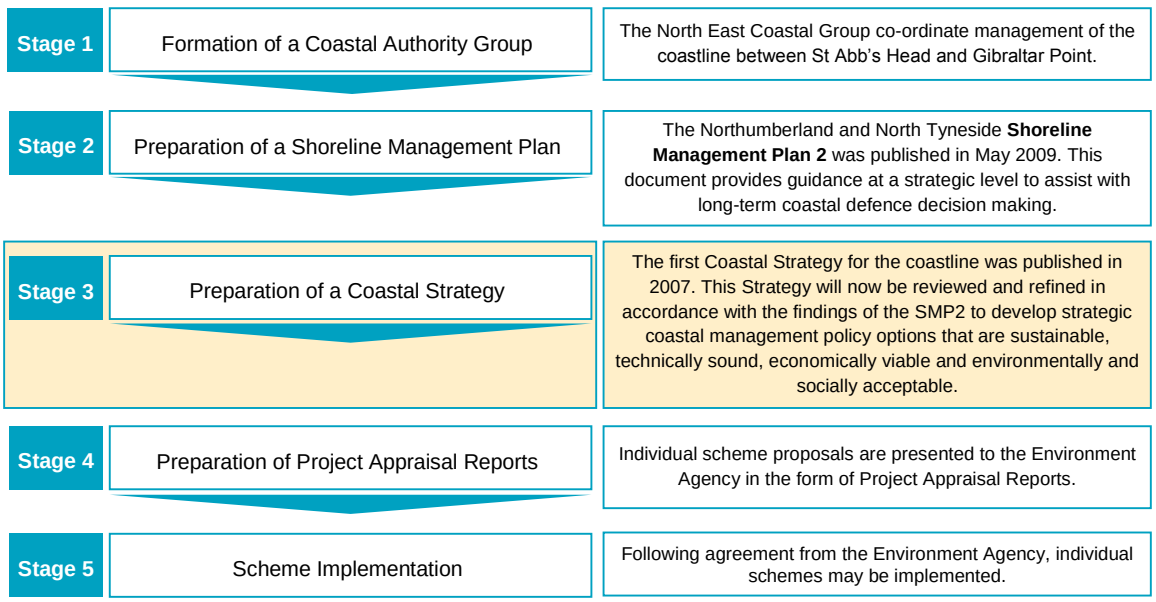
*An **outline of the contents, main objectives of the plan or programme** and relationship with other relevant plans and programmes...* (Annex 1 (a))

2.1 Background to the Hartley Cove to the River Tyne Coastal Strategy

2.1.1 The Hartley Cove to the River Tyne Coastal Strategy is a non-statutory document providing a high-level basis for decision making in relation to the long term management of the coastline. The Strategy appraises a range of coastal defence options to determine; the most sustainable, technically sound, economically viable and environmentally and socially acceptable methods of managing risks such as coastal flooding, erosion and sea level rise.

2.1.2 The Strategy document sits within a larger planning framework for coastal defence management, as illustrated in Figure 1.1, below. It draws on the strategic direction outlined in the Shoreline Management Plan to develop individual coastal defence schemes or projects for works at specific locations along the coast. The Strategy provides a more in-depth appreciation of the risks and requirements for protection, examining the coastal processes in detail and appraising the options against economic, environmental and social criteria.

Figure 2.1 Coastal Defence Planning Framework



2.1.3 The first Coastal Strategy for the coastline between Hartley Cove and the River Tyne was published in 2007. Since this initial publication, a programme of coastal monitoring has been carried out to obtain data and improve the understanding of coastal processes and the risks they pose. There have also been a number of important changes to legislation and policy, including the introduction of the Flood and Water Management Act, 2009 and a review of the higher level Shoreline Management Plan for the Northumberland and North Tyneside coast (SMP2) in 2009.

2.1.4 In light of these changes, a comprehensive review of the original Coastal Strategy and its recommendations is now required. The review will draw on the updated management policies outlined in SMP2, along with new sources of data, to put forward a revised shortlist of long term, sustainable solutions for individual project areas along the coast. Potential sources of partnership funding for these schemes will also be explored.

2.2 Aims and Objectives of the Coastal Strategy

2.2.1 The aim of the Coastal Strategy is:

'to provide an appropriate level of coast defence along the NTC coastline for the next 100 years to protect lives, property, infrastructure and the environment in accordance with technical, economic, environmental and social criteria.'

2.2.2 Subject to the aim of the Strategy the objectives are:

- to protect homes and property from flooding and/or erosion risk;
- to prevent loss, damage and disruption to infrastructure;
- to maintain access to the coast for tourism and leisure, including access points, car parking, promenades and cycle networks;
- to protect commercial assets and use of the coast;
- to maintain or improve the quality of environmentally designated sites, including promoting biodiversity and maintaining conservation value; and,
- to maintain the conservation value of, and access to, historic assets on the coast.

2.3 Study Area

2.3.1 The Strategy coastline stretches from Hartley Cove in the north to the River Tyne in the south and covers the urbanised areas of Whitley Bay and Tynemouth; a distance of approximately 10km. The coastline falls partly within Policy Development Zone 6 from Seaton Sluice to the River Tyne and Management Areas (MAs) 24 to 27, as defined in SMP2 (see Figure 2.2). The shoreline generally consists of undefended short sections of rock outcrops, cliffs and shore platform, between which are (mostly) defended or managed beach frontages backed by cliffs

and dunes. The coastline can be divided into four principle management sections, as follows:

- **Hartley Cove to Curry's Point (MA 24)** – Cliffed frontage with a rock shore platform. Defences exist at Hartley Cove and St Mary's Island with the remainder of the frontage being undefended and eroding.

- **Curry's Point to Brown's Point (MA 25)** – Defended frontage for most of its length by concrete or masonry sea walls and with a short section of rock armour. There is one short section of undefended cliff.

- **Brown's Point to Tynemouth North Pier (MA 26)** – This frontage consists of three bays between rock headlands; Cullercoats Bay, Tynemouth Longsands and King Edwards's Bay. Cullercoats Bay is mostly defended whilst, Longsands has defences to the north and managed dunes to the south. King Edward's Bay and the adjacent cliffs are heavily defended. Tynemouth North Pier is a large masonry structure which forms the outer navigation structure to the River Tyne and provides protection to North and South Tyneside.

- **Tynemouth North Pier to the Fish Quay (MA 27)** – This frontage extends from the coastal environment adjacent to the pier to the estuarine environment at the Fish Quay. The frontage is defended by a number of different defences including, concrete and masonry sea walls, a masonry groyne, rock armour and the quay walls.

2.4 Related Assessments

Habitat Regulations Assessment (HRA)

2.4.1 The need for a 'Habitat Regulations Assessment' (HRA) arises from the European Directive 92/43/EEC on the 'Conservation of Natural Habitats and Wild Flora and Fauna' (hereafter the '*Habitats Directive*') and its implementation in the UK under the Conservation of Habitat and Species Regulations 2010 (as amended). The assessment is undertaken for 'European Sites' which include Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar Sites, Marine Conservation Zones (MCZs) and candidate sites for the former which are subject to the same provision. The HRA aims to ensure that any adverse effects on site integrity as a result of the plan are avoided and the process follows a four-stage approach as detailed below:

- ***Stage 1: Screening*** - The process to identify the likely impacts of a project upon an international site, either alone or in combination with other plans and projects, and consider whether the impacts are likely to be significant.

- ***Stage 2: Appropriate Assessment (AA)*** - The consideration of the impacts on the integrity of the European site, either alone or in combination with other plans and projects, with regard to the site's structure and function and its conservation objectives. Where there are adverse impacts, an assessment of mitigation options is

carried out to determine adverse effect on the integrity of the site. If these mitigation options cannot avoid adverse effects then development consent can only be given if stages 3 and 4 are followed.

- ***Stage 3: Assessment of Alternative Solutions*** - Examining alternative ways of achieving the objectives of the project to establish whether there are solutions that would avoid or have lesser effect on European sites.

- ***Stage 4: Imperative Reasons of Overriding Public Interest (IROPI)*** - Assessment where no alternative solution exists and where adverse impacts remain. The process to assess whether the development is necessary for IROPI and, if so, the potential compensatory measures needed to maintain the overall coherence of the site or integrity of the European site network.

2.4.2 In accordance with legislation, a HRA has been carried out for the Coastal Strategy. Following consultation with Natural England (NE) during the Screening stage, it was concluded that the Strategy's proposals were likely to result in significant effects on nearby SPA and Ramsar sites due to likely habitat loss through the process of coastal squeeze. As such the HRA progressed to Appropriate Assessment.

2.4.3 A copy of the HRA Screening Report and Appropriate Assessment Report is provided in ***Appendix A*** (to the Coastal Strategy) and should be read in conjunction with this report.

Water Framework Directive (WFD) Assessment

2.4.4 In the UK requirements of the Water Framework Directive (2000/60/EC) are transposed into law by the Water Environment (WFD) (England and Wales) Regulations 2003. These regulations require that all surface waters (rivers, lakes, transitional (estuarine) and coastal waters) and groundwaters achieve 'Good Ecological Status' or 'Good Ecological Potential' by 2015 (or in some cases by 2021 or 2027).

2.4.5 For the purposes of this Strategy, water bodies within and adjoining the Study Area were assessed to establish any potential impacts on their objectives. This assessment is presented in ***Appendix B*** (to the Coastal Strategy).

Figure 2.2 Study area location plan

3. The Strategic Environmental Assessment Process

3.1.1 Under EU Directive 2001/42/EC (hereafter referred to as the 'SEA Directive') a Strategic Environmental Assessment (SEA) is required for certain plans and programmes which are likely to have a significant effect on the environment. Currently there is no legal requirement to apply the SEA Directive to Coastal Strategies however, as these plans clearly help to set the future framework for planning, have significant environmental implications and require extensive consultation, it is considered best practice to do so[4].

3.1.2 The principle aim of the SEA Directive is to 'provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development...' By including SEA during high-level decision-making, it is possible to carry out a systematic appraisal of the potential environmental consequences of all options, allowing schemes to be directed towards the most appropriate solutions.

3.1.3 To this end, an SEA has been undertaken in parallel with the development of the revised Hartley Cove to the River Tyne Coastal Strategy Plan, allowing for the environmental effects of the plan and its proposed options to be considered from an early stage.

3.1.4 The approach adopted by the SEA adhered to requirements set out in The Environmental Assessment of Plans and Programmes Regulations, 2004 (SI 2004 No.1633) (hereafter referred to as the '*SEA Regulations*') and followed best practice guidance[5] produced by the former Office of the Deputy Prime Minister (ODPM), now Department of Communities and Local Government (DCLG). A summary of the principle stages in the SEA process followed, as outlined in best practice guidance, is provided in Table 3.1, below.

Table 3.1 Stages in the SEA Process

SEA Stages and Tasks		Purpose
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope		
A1	Identify other relevant plans, programmes and environmental protection objectives.	To establish how the plan or programme is affected by outside factors to suggest ideas for how any constraints can be addressed, and to help identify SEA objectives.
A2	Collecting baseline information.	To provide an evidence base for environmental problems, prediction of effects, and monitoring; to help in the development of SEA objectives.
A3	Identifying environmental problems.	To help focus the SEA and streamline the subsequent stages, including baseline information analysis, setting of the SEA objectives, prediction of effects and monitoring.

[4] Defra (2006), Shoreline Management Plan Guidance, Volume 1: Aims and Requirements
[5] ODPM (2005), A Practical Guide to the Strategic Environmental Assessment Directive

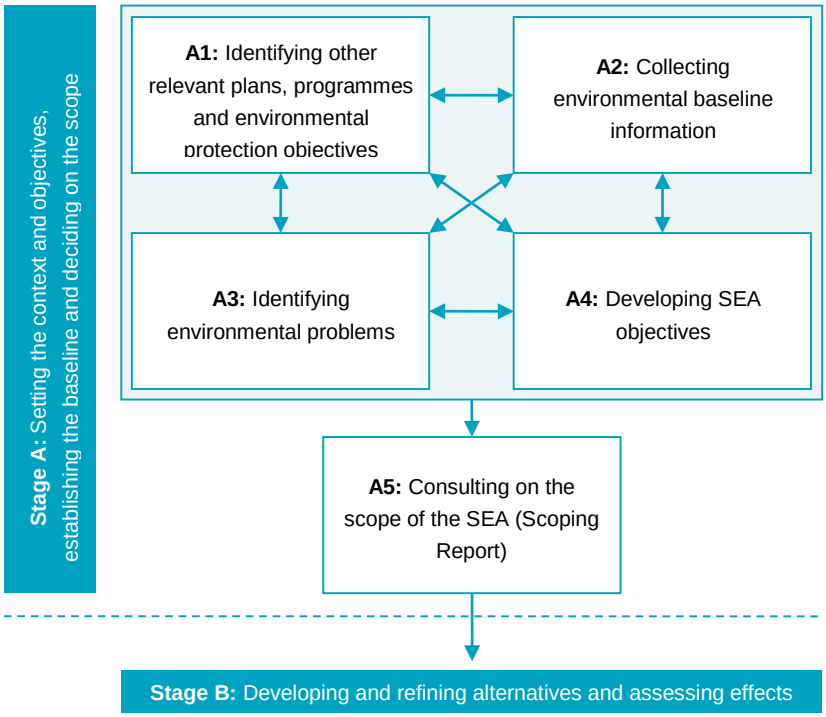
SEA Stages and Tasks		Purpose
A4	Developing SEA objectives.	To provide a means by which the environmental performance of the plan or programme and alternatives can be assessed.
A5	Consulting on the scope of SEA.	To ensure that the SEA covers the likely significant environmental effects of the plan or programme.
Stage B: Developing and refining alternatives and assessing effects		
B1	Testing the plan or programme objectives against the SEA objectives.	To identify potential synergies or inconsistencies between the objectives of the plan or programme and the SEA objectives and help in developing alternatives.
B2	Developing strategic alternatives.	To develop and refine strategic alternatives.
B3	Predicting the effects of the plan or programme, including alternatives.	To predict the significant environmental effects of the plan or programme and alternatives.
B4	Evaluating the effects of the plan or programme, including alternatives.	To evaluate the predicted effects of the plan or programme and its alternatives and assist in the refinement of the plan or programme.
B5	Mitigating adverse effects.	To ensure that adverse effects are identified and potential mitigation measures are considered.
B6	Proposing measures to monitor the environmental effects of plan or programme implementation.	To detail the means by which the environmental performance of the plan or programme can be assessed.
Stage C: Preparing the Environmental Report		
C1	Preparing the environmental report.	To present the predicted environmental effects of the plan or programme, including alternatives, in a form suitable for public consultation and use by decision makers.
Stage D: Consulting on the Draft Plan or Programme and the Environmental Report		
D1	Consulting the public and consultation bodies on the draft plan or environmental report.	To give the public and the consultation bodies an opportunity to express their opinions on the findings of the Environmental Report and to use it as a reference point on commenting on the plan or programme. To gather more information through the opinions and concerns of the public.
D2	Assessing significant changes.	To ensure that the environmental implications of any significant changes to the draft plan or programme at this stage are assessed and taken into account.
D3	Making decisions and providing information.	To provide information on how the environment Report and consultees opinions were taken into account in deciding the final form of the plan or programme to be adopted.
Stage E: Monitoring the significant effects of implementing the plan or programme on the environment		
E1	Developing aims and methods for monitoring.	To track the environmental effects of the plan or programme to show whether they are as predicted; to help identify adverse effects.
E2	Responding to adverse effects.	To prepare for appropriate responses where adverse effects are identified.

3.2 Stage A: SEA Scoping

3.2.1 The SEA has been scoped (Stage A) to determine the likely extent and level of information to be included in the assessment process. Scoping facilitated discussion and consultation with stakeholders early on in the process and helped to ensure that the SEA was conducted to a level of detail which was fit for purpose. It also helped to ensure that all environmental issues were appropriately identified and that the definition of objectives for the SEA aligned with an understanding of the existing environment and the aspirations of the key stakeholders.

3.2.2 Scoping incorporated five principal tasks which are discussed in further detail below. The relationships between these tasks are illustrated in Figure 3.1, below.

Figure 3.1 Relationships between Stage A Scoping Tasks



A1: Identification of Relevant Plans and Programmes

3.2.3 A plan or programme will be influenced by, or will influence, other plans and programmes. External environmental protection objectives such as those laid down in policies or legislation should also be taken into account. By having an understanding of relationships between these documents it is possible to recognise potential synergies, as well as deal with any consistencies and constraints.

3.2.4 A comprehensive list of relevant plans, policies and programmes was reviewed during scoping and updated during the preparation of this report to incorporate additional documents suggested by the key stakeholders during consultation. Those plans, policies and programmes of most relevance are detailed further in ***Section*** 5 whilst, the full list is provided in ***Annex A***.

A2: Collecting Baseline Information

3.2.5 Baseline information provides the foundation for predicting potential environmental effects of a plan or programme. Aspects of the baseline to be considered are listed in Annex I of the SEA Directive and include information on; biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage (including architectural and archaeological heritage) and the landscape.

3.2.6 In addition, the consultation process undertaken with key stakeholders during scoping identified several further environmental topics for consideration. These include; the local economy and transport.

3.2.7 An updated summary of the environmental baseline is provided in ***Section*** 6 of this report, with figures showing the location of features in ***Annex B***.

A3: Identifying Environmental Problems

3.2.8 This task provided an opportunity to define the key environmental issues and helped to focus subsequent stages of the SEA process. Potential problems were identified by exploring; conflicts between the policies of different plans and programmes, tensions between the baseline conditions and existing targets, objectives or obligations, and issues raised by consultation bodies and the public.

3.2.9 ***Section*** 7 of this report provides an updated summary of the environmental problems identified following scoping and further consultation exercises.

A4: Developing SEA Objectives, Targets and Indicators

3.2.10 Objectives of an SEA are distinct and serve a different purpose to those developed for a plan or programme. They are devised to enable the environmental effects of a plan or programme to be tested, as well as enabling a comparison of alternatives to be made.

3.2.11 In conducting the environmental assessment, a test of compatibility has been performed between the SEA objectives and those of the Coastal Strategy. Where conflicts between objectives were identified, alternatives and options for mitigation are considered.

3.2.12 The SEA objectives identified in this report (*see* ***Section 5***) have been derived through consultation with stakeholders and the public, an understanding of the environmental baseline and a review of related plans and programmes. Indicators are provided against each objective as a basis for monitoring the environmental effects of implementing the Coastal Strategy and are derived where possible from baseline data.

A5: Consulting on the SEA Scope – The Scoping Report

3.2.13 The Scoping stage culminated with the production of a Scoping Report which formed the basis for formal consultation with environmental authorities namely; Natural England (NE), English Heritage (EH), Environment Agency (EA) and the Marine Management Organisation (MMO). The report brought together, at that stage, all identified plans and programmes of relevance to the Hartley Cove to the River Tyne Coastal Strategy along with details of the environmental, economic and social baseline of the study area. In establishing the baseline, key environmental issues were identified and objectives of the SEA were defined (*see* ***Section 5***).

3.2.14 Subject to the requirements of the SEA Directive and paragraph 4 of the SEA Regulations, the Scoping Report was distributed to the following consultation bodies for comment:

- Natural England (NE)
- English Heritage (EH)
- Environment Agency (EA)
- Marine Management Organisation (MMO)

3.2.15 The Scoping Report was also circulated electronically to a number of consultees falling within Consultation Groups One and Two (see ***Annex C*** to this report) and placed on North Tyneside Council's webpage for general public viewing. A copy of the Scoping Report issued can be viewed in ***Appendix D*** to the Coastal Strategy document.

3.2.16 The consultation period lasted for **5 weeks**, from **25th June to 30th July 2014** during which time comments were invited on the following:

Q1: Have all plans and programmes relevant to the Coastal Strategy been identified?

Q2: Are there any significant gaps or errors in the environmental baseline data that has been identified?

Q3: Are there any additional environmental issues, opportunities or constraints that need to be considered as part of the SEA for the Coastal Strategy?

Q4: Are the proposed SEA objectives, indicators and assessment criteria suitable in the context of the Coastal Strategy, and are there any objectives, indicators or assessment criteria that should be removed or added?

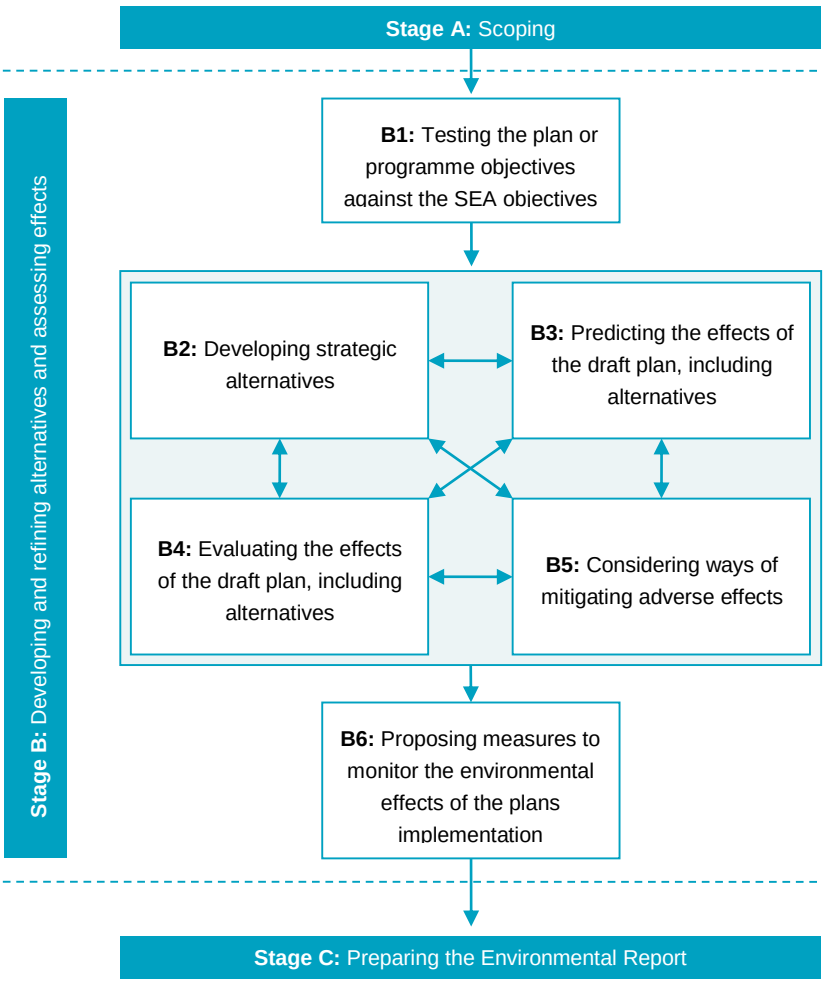
Q5: Do you have any further comments on the proposed approach and scope of the SEA?

3.2.17 Comments received during scoping were used to update; the review of relevant plan, policies, and programmes, the environmental baseline, the key environmental issues and SEA objectives where appropriate. This information was then taken forward into Stage B of the SEA.

3.3 Stage B: Developing Alternatives and Assessing Effects

3.3.1 Stage B incorporated six principle tasks which are presented in further detail below. The relationships between these tasks are illustrated in Figure 3.2:

Figure 3.2 Relationships between Stage B Developing Alternative and Assessing Effects



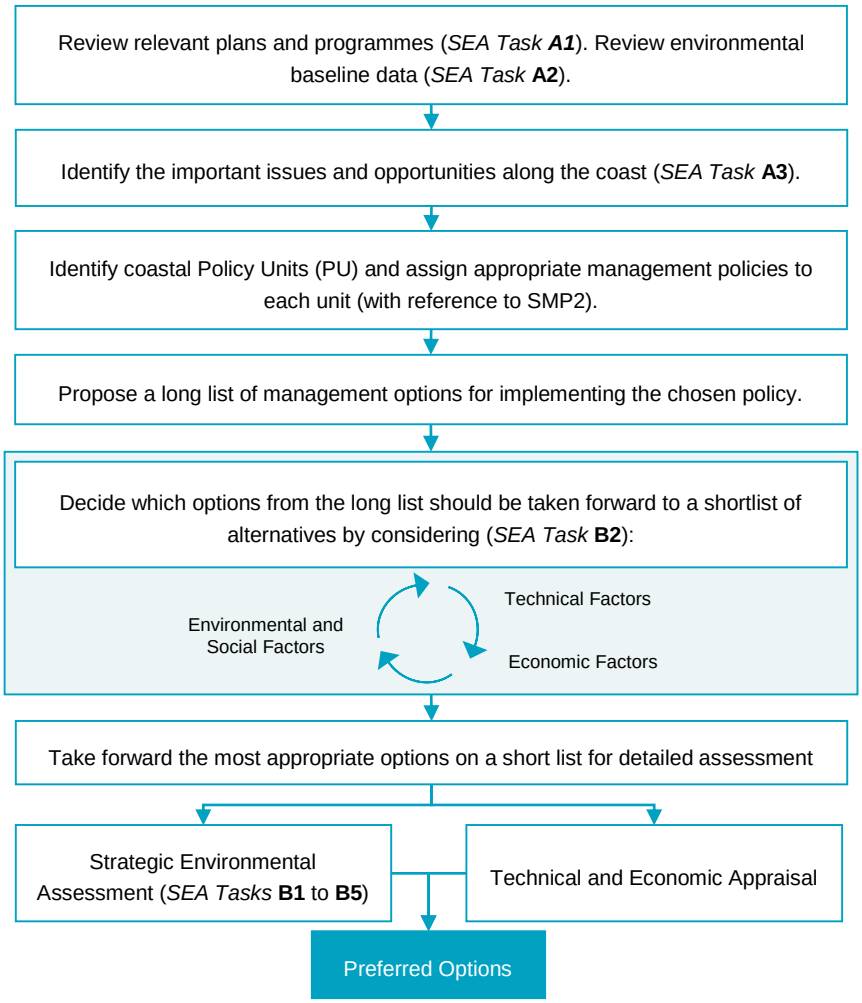
B1: Testing the plan objectives against the SEA objectives

3.3.2 The objectives of the Coastal Strategy were tested against the SEA objectives to identify both potential synergies and inconsistencies. The aim was to achieve consistency between the objectives however, were this was not possible a decision was made as to where the priority lies and a justification for this decision recorded in the Environmental Report.

B2: Developing strategic alternatives

3.3.3 In conducting the SEA the likely significant environmental effects of implementing the Coastal Strategy and any reasonable alternatives were appraised. A number of 'options' were developed by the Strategy to fulfil its objectives; these options were appraised under the SEA process to understand the positive and negative effect of each and help to direct decision making towards adoption of the most appropriate alternatives. Figure 3.3 below provides a summary of the approach to options development and highlights where SEA tasks were applied.

Figure 3.3 Options development appraisal and decision making processes



3.3.4 During the options development process, a series of Policy Units (PU) dividing up the coast were defined and appropriate management policies assigned to each (taking into account adopted policies in SMP2). A long list of alternatives implementing these policies was then developed based upon a number of generic management options. A description of these options, are presented in Table 3.2 below.

Table 3.2 Generic Management Options

Generic Management Option	Description
Do Nothing	Undertake no further work, maintenance or repair on the defences. The defences would deteriorate over time and eventually fail. Natural processes would be allowed to take their course. **This option is used as a baseline against which all other options are tested.** *This option relates to the '**No Active Intervention Policy'** in SMP2.*
Do Minimum	A minimum intervention action, with works restricted to a reactive manner, i.e. repairing breaches when they occur. This option would be appropriate when: (1) breaches do not pose a risk to life; or, (2) soft defences are of a high standard of protection and only monitoring/minor intervention is required. *This option relates to the '**Hold the Line Policy**' in SMP2.*
Maintain	Maintaining the defence in a good working order and restoring it to its previous condition in the event of a failure. The maintenance and repair works do not change the defence or its performance. The standard of protection would reduce over time (due to sea level rise and risk from flooding). This option would be appropriate when: (1) breaches could pose a risk to life and a proactive response is required; or, (2) benefits of an existing scheme could be compromised by a breach of a weaker frontage. *This option relates to the '**Hold the Line Policy'** in SMP2.*
Sustain	An option that responds to potential increases in risk from climate change, urban development and land use change into the future. The defences and the current standard of protection is sustained through works, including construction of new defences where necessary. *This option relates to the '**Hold the Line Policy**' in SMP2.*
Improve	Improving the defences, usually through replacement with a new structure or the addition of new structural elements. The current standard of protection is increased. *This option relates to the '**Hold the Line Policy**' in SMP2.*
Managed Realignment	The placement of new defences on the landward side of the existing defences or realignment to higher ground. *This option relates to the '**Managed Realignment Policy'** in SMP2.*
Advance the Line	Construct new defences seaward of the existing defences to reclaim an area of land. *This option relates to the '**Advance the Line Policy**' in SMP2.*

3.3.5 A high level environmental assessment of the long list options was conducted (alongside a technical, economic and social appraisal) to identify any potential issues that may make an option unsuitable. The most appropriate options were then taken forward on a shortlist of alternatives for detailed assessment.

3.3.6 Further details of the options development process and long list assessment are documented in **Technical Report 6: Options and Economic Assessment.** Assessments documented in this report relate to the short list of alternatives only.

B3: Predicting the effects of the draft plan, including alternatives

3.3.7 The prediction of effects involves identifying changes to the environmental baseline which are predicted to arise following implementation of the Coastal Strategy. In carrying out this task a 'do nothing' scenario was also be assessed to provide a comparison of effects should no strategy for coastal management be implemented. Changes to the environmental baseline is described in terms of their magnitude, their geographical scale, the time period over which they occur, whether they are temporary or permanent, positive or negative and whether they are secondary, cumulative and/or synergistic effects (see descriptions provided in Table 3.3 and Table 3.4, below).

B4: Evaluating the effects of the draft plan, including alternatives.

3.3.8 Evaluation involves forming a judgement on whether the predicted effects of the Strategy are likely to be environmentally significant. In determining significance, reference was made to the assessment criteria developed for the SEA Framework (see Table 8.1 in ***Section*** 8) and the characteristics of the effects as listed in Annex II to the SEA Directive. In particular:

- The probability, duration, frequency and reversibility of the effects;
- The cumulative nature of the effects;
- The transboundary nature of the effects;
- The risks to human health or the environment;
- The magnitude and spatial extent of the effects;
- The value and vulnerability of the area likely to be affected due to:
  - The special nature characteristics or cultural heritage;
  - Exceeded environmental quality standards or limit values;
  - Intensive land-use;
  - The effects on areas or landscapes which have a recognised national, community or international protection status.

3.3.9 The duration and nature of the effect is recorded using the scale descriptions provided in Table 3.3 and Table 3.4 below.

Table 3.3 Scale and descriptions for the duration of effects

Duration of Effect		Description
LT	Long term	25> years
MT	Medium term	5 years to 25 years
ST	Short term	0 years to 5 years
P	Permanent	Lasting or to remain for an indefinite time
T	Temporary	Lasting for a limited period of time

Table 3.4 Scale and descriptions for the nature of effects

Nature of Effect		Description
D	Direct	Resulting from an impact with no intervening factors
I	Indirect	Not directly caused by an impact
SY	Synergistic	Resulting from multiple impacts

3.3.10 Topic specific definitions have been developed for what constitutes a significant effect, a minor effect and a neutral effect for each of the SEA objectives and are provided in ***Annex E***. By defining a scale of significance for each receptor/topic area a consistent approach to the assessment will be ensured.

B5: Considering ways of mitigating adverse effects and maximising beneficial effects

3.3.11 Where an option is assessed as having a significant effect on the environment and alternatives have been considered, measures will be put forward to prevent, reduce or offset these adverse effects whilst maximising those effects that are positive.

B6: Proposing measures to monitor the environmental effects of plan implementation

3.3.12 Monitoring enables any unforeseen adverse effects to be identified following implementation of the Strategy. Decisions about what to monitor and the methods employed are considered at an early stage in the SEA process and finalised in the Environmental Report.

3.4 Stage C: Preparing the Environmental Report

3.4.1 The Environmental Report is a key output of the SEA process; it presents information on the effects of the draft Coastal Strategy prior to its implementation and forms a basis on which formal public consultation is carried out. The Environmental Report must demonstrate that the SEA Directive's requirements have been met. For the purposes of clarity, signposting is used to highlight the places in the Environmental Report where information required by the Directive is provided.

3.5 Stage D: Consulting on the draft plan and Environmental Report

D1: Consulting on the draft plan and Environmental Report

3.5.1 Consultation on the draft plan and Environmental Report is an integral part of the SEA process. The SEA Regulations do not state a specific time period for consultation but requires that 'authorities shall be given an early and effective opportunity within an appropriate time frame to express their opinion'. As such, the consultation period will be undertaken over a 5 week period after which the responses will be collated and reviewed.

D2: Assessment of significant changes

3.5.2 Any significant alterations to the draft Coastal Strategy following consultation will be incorporated into the Environmental Report. This may involve re-assessment of some of the options proposed.

D3: Decision making and providing information

3.5.3 Environmental considerations and how they have been integrated into the Coastal Strategy's development will be documented within the finalised Environmental Report. This summary will provide a clear statement of how the Strategy's options have been changed (if at all) as a result of the SEA process.

3.5.4 Similarly, any changes resulting from the consultation exercises will also be recorded. This information will however be documented in a separate report covering Public and Stakeholder Engagement.

3.6 Stage E: Monitoring

3.6.1 Stage E 'monitoring and implantation of the plan' will be undertaken by NTC as part of a monitoring programme. Indicators and targets for use during this stage have been provided in ***Section 11***, ***Table 11.1***.

4. Consultation

4.1 Introduction

4.1.1 Consultation plays an integral role in SEA. It provides the opportunity to understand the local issues and concerns of individuals, communities and business potentially affected by the outcomes of a plan or programme, as well as the stance from a strategic or national perspective.

4.1.2 The SEA Directive creates the following requirements for consultation:

- Authorities which, because of their environmental responsibilities, are likely to be concerned by the effects of implementing a plan or programme, must be consulted on the scope and level of detail of the information to be included in the Environmental Report;
- The public and the Consultation Bodies must be consulted on the draft plan or programme and the Environmental Report, and must be given an early and effective opportunity within appropriate time frames to express their opinions;
- Other EU Member States must be consulted if the plan or programme is likely to have significant effects on the environment in their territories; and,
- The Consultation Bodies must also be consulted on screening determinations on whether SEA is needed for plans or programmes under Article 3(5).

4.1.3 The action to be taken to fulfil these requirements is summarised in Table 4.1 below.

Table 4.1: Summary of consultation requirements under the SEA Directive

Steps in the SEA process	Requirements	Action to be Taken/ Taken
Determination if a plan or programme requires an SEA.	Consult Consultation Bodies if screening required.	N/A – SEA is not required for the production of Coastal Strategies but is undertaken as a matter of best practice due to their role in setting a framework for future planning.
Decision on the scope and level of detail of the assessment.	Consult Consultation Bodies.	SEA Scoping Report issued to Consultation Bodies.
Environmental Report and Draft Plan or Programme.	Consult Consultation Bodies. Consult the public. Information made available to the public.	Draft documents to be distributed to consultation bodies and made available via the NTC website.

Steps in the SEA process	Requirements	Action to be Taken/ Taken
During preparation of the plan or programme.	Take account of the Environmental Report and opinions expressed (and produce statement).	Incorporate requirements into the options development. Prepare a consultation report to document a response to comments.
Adopted plan or programme statement and measures concerning monitoring	Information made available to Consultation Bodies and the public.	Preparation of a plan monitoring report.

4.1.4 In developing the Coastal Strategy, communication and engagement with stakeholders and the public has taken place from the outset, so as to avoid potential issues arising later on in the process. A separate report detailing the engagement methods employed, the comments received and the response to these comments has been prepared and accompanies the Coastal Strategy document (see ***Technical Report 9: Public Consultation and Stakeholder Involvement***). A brief summary of activities in relation to the SEA is provided below, whilst copies of comments received so far and how these points will be taken forward in the SEA are provided in ***Annex D***.

4.2 Consultation to Date

Notification Letters

4.2.1 In February 2014, formal notification letters advising stakeholders of the intention to review the Hartley Cove to the River Tyne Coastal Strategy were issued. The organisations contacted were identified as having expected interest in the coast and some had previous involvement in the development of related plans and programmes.

4.2.2 The notification letters provided background information to the review, including a list of key objectives. Recipients were able to op in/out of future consultation via an enclosed pro-forma and were encouraged to provide any comments they may have had at an early stage.

Public Consultation Events

4.2.3 A Public Consultation Event took place in St Oswin's Church Hall, Tynemouth on 16th April 2014 between 12.30 and 7pm. The event provided information via exhibition boards on the intended programme for the review, along with background information on the findings of the last Strategy. Interested parties were invited to comment on key issues or concerns they had in relation to the management of the coast as well as identifying any gaps in data or local knowledge which may contribute to the development of the plan.

4.2.4 A second public consultation was held on the 27th November 2014 between 1pm and 6pm, at the Cullercoats Community Centre, Belle Vue Street, Cullercoats. Exhibition boards were used to present information on the short list of options being put forward for each Policy Unit and members of the project team (or comments sheets) were available to those wishing to provide feedback.

Stakeholder Inception Meeting

4.2.5 An inception meeting for stakeholders (excluding the general public) was held on 5th June 2014. The meeting provided an introduction to the project, covering its aims, objectives and a programme of tasks going forward. The meeting provided an opportunity for stakeholders to raise and discuss key issues in relation to the management of the coast.

SEA Scoping Report

4.2.6 EU Directive 2001/42/EC (the 'SEA Directive') provides guidance on the requirements for consultation with regard to the SEA. The Directive identifies a need for environmental authorities to be consulted on the scope and level of detail included in the SEA. An SEA Scoping Report forms the basis of this consultation and was issued to consultation groups one and two on 25th June 2014.

4.2.7 Consultation on this document ran for 5 weeks from 25th June to 30th July 2014 and feedback was requested with regard to; any relevant plans and programmes, the environmental baseline information identified, the main issues and risks identified, the opportunities and constraints, the proposed SEA objectives and the assessment methodology (SEA framework).

4.2.8 Feedback from the consultees with regard to the SEA Scoping exercise can be found in ***Annex D***.

4.3 Draft plan and Environmental Report consultation (Tasks D1-D3)

Consultation on the draft plan and Environmental Report

4.3.1 The SEA Directive states that '*authorities (with relevant environmental responsibilities) and the public... shall be given an early and effective opportunity within appropriate timeframes to express their opinion on the draft plan or programme and the accompanying Environmental Report before the adoption of the plan or programme.*'

4.3.2 As such consultation on this document will run for 5 weeks from 5th September 2016 to 7th October 2016.

Assessment of significant changes

4.3.3 Following consultation on the draft plan and Environmental Report, any significant alterations required will be summarised here.

Decision making

4.3.4 Following consultation on the draft plan and Environmental Report, the rationale behind the decisions made and how the responses to the consultation have been taken into account will be summarised here.

5. Relevant Plans and Programmes

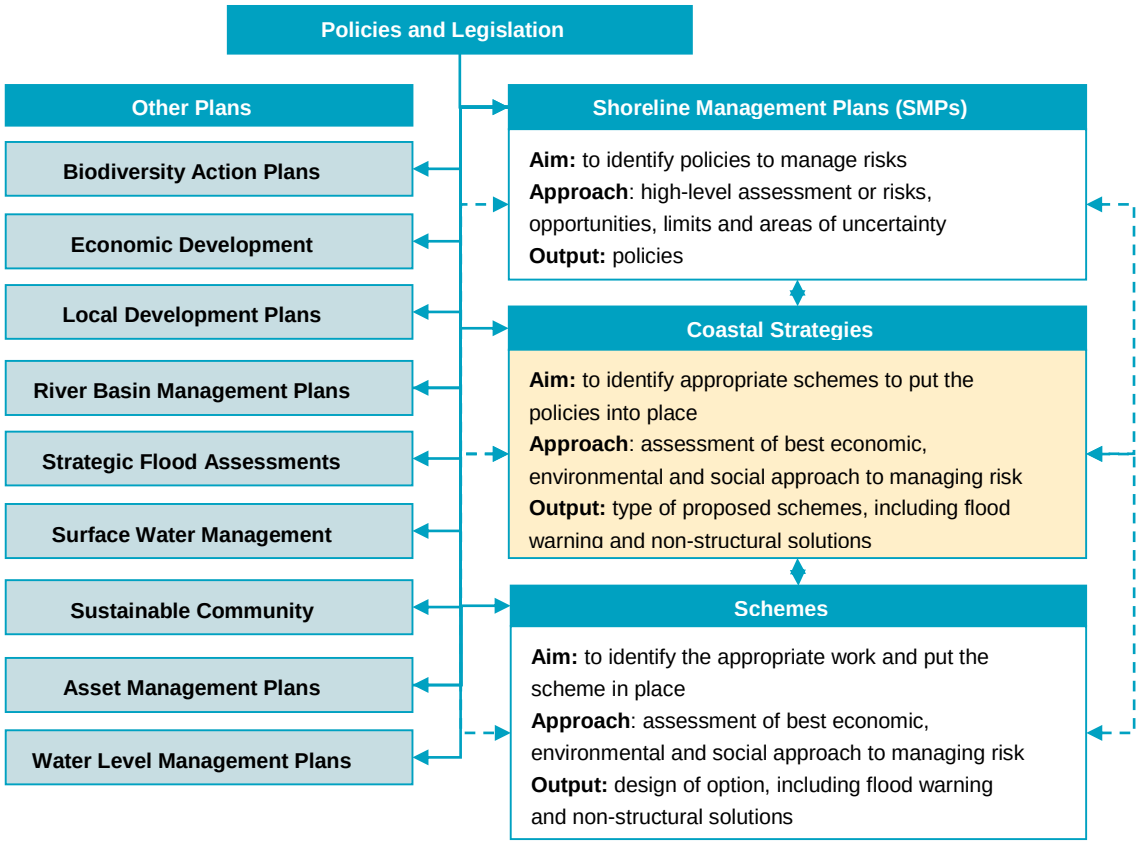
> **The SEA Directive requires:**
>
> *An outline of the contents, main objectives of the plan or programme and* ***relationship with other relevant plans and programmes****...* (Annex 1 (a))

5.1 Introduction

5.1.1 The Coastal Strategy will be influenced by, or will influence, other plans and programmes as well as any environmental objectives, such as those laid down in policies or legislation. These include European and national policies, as well as regional and local plans such as Local Development Plans and higher level Shoreline Management Plans (SMPs). An understanding of the relationships between the various policies is required to take advantage of potential synergies and to deal with any inconsistencies and constraints.

5.1.2 Figure 5.1 below, shows how the Coastal Strategy is linked within a hierarchy of decision-making and how it can be derived from, or lead to, a number of other strategies and plans.

Figure 5.1: Hierarchy of decision making with links to other processes, policies and plans



5.1.3 A comprehensive list of all relevant policies, plans and programmes is presented in ***Annex A*** of this report whilst those considered to be of most relevance are summarised in this section. Where applicable, the objectives of these policies and plans have been taken forward in the development of targets for environment assessment criteria (refer to ***Section*** 8).

5.2 National Policies and Plans

National Planning Policy Framework (DCLG, 2012)

5.2.1 The National Planning Policy Framework (NPPF) (DCLG, 2012), sets out the Government's planning policies for England and specifies how these policies should be applied. At the heart of the NPPF is the requirement to contribute towards achieving sustainable development. For plan making this means having a consideration of the economic, social and environmental aspects of sustainability. That is to say, plans should make a contribution towards building a strong, responsive and competitive economy by ensuring land is available to support growth and innovation. Communities should have access to local services and resources that support their health, social and cultural well-being and in addition, the plan should contribute to the protection and enhancement of the natural, built and historic environment and help to improve biodiversity, mitigate and adapt to climate change and minimise waste and pollution.

5.2.2 Chapters within the NPPF outline how sustainable development should be delivered. Those of most relevance to the Coastal Strategy are as follows:

- *Chapter 8: Promoting healthy communities* sets out policies on the role of the planning system in facilitating social interaction and creating healthy, inclusive communities. It identifies the need for access to high quality open space as well as the protection and enhancement of Public Right of Way networks, including National Trails.

- *Chapter 10: Meeting the challenge of climate change, flooding and coastal change* sets out the Government policy on development, flood risk and resilience to the impacts of climate change. It aims to ensure that proactive strategies to mitigate and adapt to climate change are adopted during the planning process and that the issues of flood risk and coastal change are taken account to avoid inappropriate development in areas of high risk.

- *Chapter 11: Conserving and enhancing the natural environment* sets out policies on the protection and enhancement of biodiversity, valued landscapes and geological conservation interests in the planning system. The statement places an emphasis on the hierarchy of designated sites to ensure that protection is commensurate with their status.

- *Chapter 12: Conserving and enhancing the historic environment* sets out policies to conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations.

UK Marine Policy Statement (Defra, 2011)

5.2.3 The UK Marine Policy Statement (MPS) provides the framework for the development and implementation of national and sub-national Marine Plans in the UK. It sets out a consistent and proactive approach to the management of the marine area, its resources, and the activities and interactions that take place within it, though a number of policy objectives. Those of relevance to the Coastal Strategy include:

- *Marine Protected Environments.* The economic, social and intrinsic value of a healthy marine environment should be recognised and a commitment made to halting the loss of biodiversity and restoring it so far as is feasible. Marine plans should incorporate identified areas and features of importance for nature conservation and state policies for or in connection with the sustainable development of the area. Developments or activities that may result in unacceptable adverse impacts on biodiversity should be designed or located to avoid such impacts. The plan should ensure that proposals contribute to, or at least do not hinder, the achievement of objectives associated with Marine Protected Environments (i.e. Marine Conservation Zones (MCZs), Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites).

- *Ports and shipping.* Ports and shipping play an important role in the activities taking place in the marine environment and are an essential part of the UK economy, providing the major conduit for the country's imports and exports. Ports are a substantial source of employment and also facilitate economic activity in trade-related sectors. Marine plans should take account of the need to protect the efficiency and resilience of continuing port operations, as well as further port development.

- *Fisheries.* Marine plans should consider the potential social and economic impacts of other developments on fishing activities, as well as potential environmental impacts. They should consider and measure the impacts on local communities of any reduction in fishing activity, redistribution in fishing effort or associated impact on related businesses as a result of a marine development. Where possible opportunities for co-existence between fishing and other activities should be encouraged.

- *Tourism and Recreation.* Marine plans should consider the potential for tourism and recreation in the marine environment and the benefits that this will bring to the economy and local communities. The provision of slipways, coastal footpaths and ensuring coastal access for example, has the potential to encourage economic growth and provides an opportunity to raise environmental awareness amongst coastal users.

Flood and Water Management Act, 2010

5.2.4 The Flood and Water Management Act takes forward some of the proposals identified in three previous strategy documents published by the Government; Future Water[6], Making Space for

[6] Defra (2008), Future Water – The Government's water strategy for England

Water[7] and the Government's response to Sir Michael Pitt's Review of the Summer 2007 floods[8]. The Act provides for better, more comprehensive management of flood risk and promotes the importance of sustainable development for local authorities when exercising their flood and coastal erosion risk management functions.

National Flood and Coastal Erosion Risk Management Strategy for England (Defra, 2011)

5.2.5 The Flood and Water Management Act 2010 requires the Environmental Agency (EA) to '*develop, maintain, apply and monitor a strategy for flood and coastal erosion risk management in England.'* In response the EA, jointly with Defra, produced a National Strategy which encourages more effective risk management, by enabling people, communities, business, infrastructure operators and the public sector to work together to:

- ensure a clear understanding of the risks to flooding and coastal erosion, so investment in risk management can be prioritised more effectively;
- set out clear and consistent plans for risk management to enable informed decisions to be made;
- manage flood and coastal erosion risks in an appropriate way, taking account of the needs of communities and the environment; and,
- ensure that emergency plans and responses to flood incident are effective and that communities are able to respond effectively to flood forecasts, warning and advice.

Appraisal of Flood and Coastal Erosion Risk Management (Defra, 2009)

5.2.6 A Policy Statement which sets out the principles for guiding decision making on the sustainable management of flood and coastal erosion risk in England. The Statement identifies the need for structured and systematic appraisals to be carried out in order to justify expenditure on publicly funded projects and help to achieve better social and environmental outcomes as part of sustainable development.

The Marine and Coastal Act, 2009

5.2.7 The Marine and Coastal Act put in place a variety of measures to improve the management and protection of marine and coastal environments including the creation of a competent marine planning authority (the Marine Management Organisation) to deliver marine licensing and enforcement of legislation. The Act also addresses the issue of coastal access, placing a duty on the Secretary of State and Natural England to secure a continuous, well signed and managed route around the English coastline.

[7] Defra (2004), Making Space for Water
[8] Defra (2008), The Government's Response to Sir Michael Pitt's Review of the Summer 2007 Floods

The Wildlife and Countryside Act, 1981 (as amended)

5.2.8 The Wildlife and Countryside Act, 1981 consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (the '*Bern Convention'*) and Council Directive 2009/147/EC on the conservation of wild birds (the '*Birds Directive'*). The Act makes it an offence to intentionally kill, injure or take any wild bird (with the exception of those listed in Schedule 2) or wild animal (as listed on Schedule 5) and prohibits interference with places used for shelter and protection. Protection is also afforded to wild plants, making it an offence to pick, uproot or destroy any plants listed in Schedule 8. A statutory review of the protected animals and species covered by the Act is conducted every five years to ensure any new species requiring protection are incorporated.

5.2.9 The Act also provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) which are identified for their flora, fauna geological or physiographical features. The designation helps to ensure appropriate long term management and regular monitoring of a sites condition. Any operations that have the potential to damage a SSSI require consent from the regulatory authority (Natural England).

Conservation of Habitats and Species Regulations, 2010 (as amended)

5.2.10 The Conservation of Habitat and Species Regulations 2010 (the '*Habitats Regulations'*) transpose European Union Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the '*Habitats Directive'*), into national law. The regulations provide for the designation and protection of 'European Sites' (Special Areas of Conservation, Special Protection Areas, Ramsar sites and Marine Conservation Zones), 'European Protected Species' and the adaptation of planning controls for the protection of such sites and species.

5.2.11 Under the regulations competent authorities have a duty in exercising their function to have regard to the EC Habitats Directive. The regulations provide for the control of potentially damaging operations, whereby consent from the competent authority may only be granted once it has been shown through 'appropriate assessment' that the proposed operation will not adversely affect the integrity of the site. When considering potentially damaging operations, competent authorities apply the precautionary principle i.e. consent cannot be given unless it is ascertained that there will be no adverse effect on the integrity of the site.

5.2.12 In instances where damage could occur and no reasonable alternatives exist, a plan or project may proceed for imperative reasons of overriding public interest (ROPI). In such instances the Secretary of State must secure compensation to ensure the overall integrity of the European Site network.

5.2.13 A Habitat Regulations Assessment (HRA), which integrates the appropriate assessment, has been conducted alongside the development of the Coastal Strategy to ensure requirements of the Habitats Regulations are met. Further details can be found in ***Appendix A*** to the ***Coastal Strategy***.

5.3 Regional and Local Plans

North Tyneside Council Unitary Development Plan (NTC, 2002)

5.3.1 The North Tyneside Unitary Development Plan (UDP) is a statutory plan and policy document guiding development in the borough. Adopted policies will continue to guide development until their eventual replacement by the Local Plan (expected November 2015). A principle concern of the UDP is the protection and improvement of the physical environment, particularly for areas of strategic environmental importance such as the coast which assist in the task of attracting inward investment and tourism. An area of coastal protection is defined where an open character is to be maintained and where possible enhanced, encouraging tourism and recreation but not at the detriment of landscape and nature conservation value.

North Tyneside Local Plan (NTC, 2015 – Draft)

5.3.2 The Local Plan is a statutory document setting out policies for the development and use of land, providing the overall spatial vision for North Tyneside to 2030. Locally specific policies and proposals for key areas, notably the coast, are provided alongside borough wide policies guiding the scale, type and location of new development and investment. The Local Plan is currently at consultation draft stage with an anticipated adoption date of November 2015. Polices of relevance to this Coastal Strategy include:

- *Policy AS/1.5*. The Coastal Sub Area sets out a need to integrate growth and development of the coast with the protection and enhancement of the built and natural environment, in particular the area's heritage assets at Tynemouth, Cullercoats, Whitley Bay and St. Mary's Island and the Northumbria Coast SPA and Ramsar site.

- *Policy AS/8.10.* Coastal Erosion restricts development within the Coastal Change Management Area to ensure that there are no adverse effects on biodiversity, tourism and leisure and the rates of coastal erosion currently observed as a result. The policy identifies that coastal defences around St Mary's headland should be maintained and vehicular access protected as well as a long term aspiration to maintain the beach and dunes around Tynemouth Longsands.

- *Policy S/8.4*. Biodiversity and Geodiversity sets out a need to protect and enhance the borough's biodiversity and geodiversity resources with regard to their relative significance. Priority is given to developments that seek to protect statutory and non-statutory designated sites and help to achieve the objectives and targets of the LBAP

- *Policy AS/8.7*. Coastal Green Links supports improvements to the cycle network along the coast and links to other routes to improve safety and convenience.

- *Policy S/9.10*. Heritage Assets sets out an aim to proactively preserve, promote and enhance heritage assets by recognising their significance and targeting improvements for those assets at risk or vulnerable to risk.

- *Policy DM/9.12*. Archeological Heritage seeks to protect, enhance and promote the borough's archaeological heritage.

Northumberland and North Tyneside Shoreline Management Plan 2 (NCAG, 2009)

5.3.3 Shoreline Management Plans (SMPs) provide a large-scale assessment of the risks associated with coastal evolution and present a policy framework to address risks to people and the developed, historic and natural environment, in a sustainable manner. SMP2 sets out the results of the first revision to the original Shoreline Management Plan which covers a stretch of coastline extending from the Scottish Border south, to the River Tyne. It is a non-statutory document promoting policies for the management of risks from coastal erosion and sea flooding over the next 100 years.

5.3.4 Policy Development Zone 6 (PDZ6) from Seaton Sluice to the River Tyne aligns with the stretch of coastline covered by this Coastal Strategy. The area is described as comprising of short sections of hard rock outcrops of sea cliff and shore platform, in between which are (mostly) defended or managed beach frontages backed by cliffs and dunes. Current policy along this stretch of coastline is to generally maintain protection to property and infrastructure against erosion and sea flooding where defences exist, whilst allowing the natural development of undefended sections. Specific policies for the individual Management Areas (MAs) falling within PDZ6 are as follows:

- *MA24 Seaton Sluice to Curry's Point* – Hold the Line (Collywell Bay), Crag Point headland to remain undefended.
- *MA25 Curry's Point to Brown's Point* – Hold the Line, with the exception of Managed Realignment at Trinity Road car park.
- *MA26 Brown's Point to Tynemouth North Pier* – Hold the Line where existing defences are in place, No Active Intervention where coastline is currently undefended.
- *MA27 Tynemouth North Pier to Fish Quay* - Hold the Line where existing defences are in place, No Active Intervention where coastline is currently undefended.

5.3.5 Key challenges identified in the plan include maintaining the largely Victorian era defences and managing the transition points between defended and undefended sections of coast.

Northumberland Inshore Fisheries and Conservation Authority Annual Plan 2013-2014 (NIFCA, 2013).

5.3.6 NIFCAs vision is to '*lead, champion and mange a sustainable marine environment and inshore fisheries, by successfully securing the right balance between social, environmental and economic benefits to ensure healthy seas, sustainable fisheries and a viable industry*'. To achieve this vision, an annual plan is produced for the NIFCA region which identifies local targets, priorities and objectives. In the 2013/14 plan, priorities of most relevance to the Coastal Strategy include:

- To undertake an SEA of NIFCA's fisheries management regime;
- To undertake requirements in respect of Marine Conservation Zones (including candidate sites);
- To conduct surveys to obtain data and evidence regarding Recreational Sea Angling in the district and to develop a plan to recognise the importance of this activity;
- To contribute towards achieving conservation objectives of the Berwick and Northumberland Coast European Marine Site (Special Protection Area) and ensure that qualifying features are maintained in a favourable condition. Monitor and manage commercial fishing activity occurring within the site and assist Natural England with sea floor mapping;
- To contribute to research projects into crab and lobster stocks and issues of litter effecting the fishing industry; and,
- Have regard to features of archaeological or historic interest in the activities NIFCA are involved with.

North Tyneside Coastal Zone Strategic Framework and Masterplan (NTC, 2011)

5.3.7 A document providing an overarching framework to guide tourism and culture led regeneration of the coastal area over 15 years. The framework brings together details of initiated and delivered projects as well as providing a structure for the co-ordinated delivery of new and complementary projects. Proposals are linked to 6 key areas of change along the coast and are summarised as follows:

- *Northern Promenade* – developments of Spanish City and Beach Huts to provide a modern slant on the traditional seaside offer. The exposed lower promenade offers potential for coastal walks and development of a North Tyneside Triathlon. Running, cycling and water based sports to be encouraged.
- *Central Promenade* – a need to make the promenade structurally sound in order to maintain the sea defences. Opportunities associated with securing this investment to improve paving and public art.
- *Southern Promenade and Brown's Bay* – Diving and other outdoor sports to be encouraged. The area is to retain and embrace its rugged feel.
- *Cullercoats* – The relative tranquillity of the area to be preserved. Vacant retail units to be used to display works of local artists and creatives.
- *Longsands* – A place for everyone. Development of an urban gym on the disused open air pool and sports such as surfing encouraged. Improvements to family attractions and a programme of sporting and musical events.

- *Priory* – Improved interpretation of heritage assets. A programme of plays, festivals and music events. Development of a 'self-propelled lift' providing access to King Edward's Bay.

Tynemouth Village Conservation Area Management Strategy (NTC, 2014)

5.3.8 Adopted as a Supplementary Planning Document (SPD), the Strategy recognises Tynemouth Village for its major historic value and puts forward a plan for managing change and future development within the Conservation area. Enhancement opportunities identified include conservation, re-use and development of the Tynemouth Outdoor Pool (a fundamental part of the sea defence), a project to uncover the Lion's Head Fountain at Long Sands and the provision of suitable paths and walkways to encourage walking and cycling.

North Shields Fish Quay Neighbourhood Plan (NTC, 2013)

5.3.9 The Fish Quay Neighbourhood Plan (a SPD) sets out a community-based vision for the area, focusing on its potential to be a vibrant, mixed-use neighbourhood, which thrives on its fishing industry, social and leisure facilities, business and residential community. Objectives with regard to transport and accessibility include the provision of steps and ramps down to the Fish Quay beach and improved facilities and routes for pedestrians and cyclists along the river. The plan recognises that parts of the Quay should be retained as working areas due to the important contribution the fishing industry and associated shops/activities make to the regional economy.

Local Register of Buildings and Parks SPD (NTC, 2008)

5.3.10 A SPD which outlines policies and objectives with regard to the register of buildings and parks of local architectural and historic interest. The Local Register was compiled from a list of public nominations in 2005 and later finalised by a panel of local history, architecture and conservation experts. The register offers a level of protection against undesirable alteration and aims to give recognition to the sites as well as preserve or enhance their local architectural and historic interest. Where planning permission is submitted for the demolition of a building on the register, authorities must take account of the building's local interest in determining the application. A proposal to demolish a Locally Registered building in a conservation area will be assessed against the same criteria as a proposal to demolish a Statutory Listed building.

Fish Quay Banksides Management Plan (NTC, 2011)

5.3.11 The Fish Quay banksides are located at the mouth of the Tyne estuary at North Shields and form an important wildlife corridor and area of green space along the River Tyne. Landscaping along the banksides includes a mixture of woodland and scrub habitat, semi-improved neutral grassland, amenity grassland and ornamental planting. This mature planting is important for wildlife, in particular birds and invertebrates as foraging, nesting and feeding habitat. A management plan for the area was adopted in 2011 with the aim of protecting and enhancing the site's biodiversity and conservation value, as well as its aesthetic value in the long term. Management objectives include retaining the existing mature woodland and scrub where possible whilst, implementing a programme for the removal of unwanted invasive species,

including Japanese knotweed.

The Green Space Strategy (NTC, 2008)

5.3.12 The Green Space Strategy sets out the long term vision for green spaces within the Borough, with the aim to provide green spaces that are attractive, safe, accessible and well managed. Adopted in 2007, and later updated following a series of site audits in 2008, the Strategy sets out local standards for the quantity, distribution and quality of green spaces in North Tyneside. Objectives include setting minimum distances for households to access parks and semi-natural green spaces, as well as ensuring that current pedestrian, cycling and multi-use routes are protected and improved. Provision for a range of other adult and youth facilities, for instance golf courses, should also be made available within an appropriate travelling distance.

Green Infrastructure Strategy (NTC, 2011)

5.3.13 A Strategy which looks at the networks of green space that exist across the borough and identifies deficiencies and opportunities in the green infrastructure provision. The Strategy sets out a vision for Green Infrastructure development and enhancement over the next 15 years with a focus upon the creation of a coherent green space network, linking parks, play areas, sports pitches and community woodlands. Opportunities specific to the coast include development of a cohesive route following the Coast Road (A1058) to Whitely Bay and links from the Rising Sun Country Park to the coast.

North Tyneside Tourism Strategy 2007 – 2012 (NTC, 2007)

5.3.14 The Tourism Strategy 2007 to 2012 identifies the unique selling points of North Tyneside and provides a five year framework for growing the tourism offer in the borough. At the heart of the Strategy is the vision to create a cultural coastline of international significance, with a commitment to invest in infrastructure and regeneration projects along the coast. Opportunities will also be explored for developing a programme of world-class events with regional, national and international appeal. This includes establishing the coastline as a venue for hosting surfing and water sport events/activities.

Newcastle and North Tyneside Biodiversity Action Plan (NCC & NTC, 2008)

5.3.15 A ten year vision for the protection and enhancement of biodiversity in Newcastle and North Tyneside. The aim of the Plan is to ensure that the natural environment is managed more effectively to protect natural resources and to leave a legacy that will benefit present and future generations. The Local Biodiversity Action Plan (LBAP) sets specific targets for habitat creation to offset previous and predicted losses and where possible, provide ecological enhancements. The Plan currently consists of 10 Habitat Action Plans and 12 Species Action Plans.

European Site Conservation Objectives for the Northumbria Coast Special Protection Area (NE, 2014)

5.3.16 A document which sets out the conservation objectives for the Northumbria Coast SPA in conjunction with an accompanying 'Supplementary Advice' document (Regulation 33(2) Conservation Advice Package). Conservation objectives include ensuring that the integrity of the SPA is maintained or restored as appropriate by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying species;
- The structure and function of the habitats of the qualifying features;
- Supporting processes on which the habitats of the qualifying features rely;
- The population of each of the qualifying features; and,
- The distribution of the qualifying features within the site.

6. Baseline Environmental Conditions

The SEA Directive requires:

The relevant aspects of the current state of the environment... (Annex 1 (b)) **and**
The environmental characteristics of areas likely to be significantly affected (Annex 1 (c))

6.1 Introduction

6.1.1 A comprehensive review of available baseline environmental data has been conducted for the study area. The study area incorporates all assets up to a 200m buffer from the seaward side of the low water line and the inland side of the high water line, (see Figure 2.2 in Section 1.2). This has been identified as the area which is likely to be impacted the most, either directly or indirectly, by the management of the coast.

6.1.2 The baseline review identifies the natural, economic and social features of the coast including the landscape, habitats and historical structures which help to define its character and ultimately, make it unique. By understanding this character and recognising why the coast is important to stakeholders, a more holistic approach to management can be adopted.

6.1.3 Information is presented under eleven theme headings, as follows:

- Population, Human Health and Recreation
- Local Economy
- Transport
- Biodiversity, Flora and Fauna
- Water
- Air, Noise and Light
- Land Use
- Landscape/Seascape and Visual Amenity
- Cultural Heritage
- Geology, Soils and Material Assets
- Climatic Factors

6.2 Population, Human Health and Recreation

Population

6.2.1 Based on UK Census statistics, 200,801 people lived in North Tyneside in 2011 however, the distribution of this population was found to vary greatly across the borough. Four of the five wards falling within the study area were recorded as having a higher population density than the North Tyneside average, indicating a concentration of people choosing to live by the coast. Whitley Bay is the most densely populated ward with around 60 people per hectare; generally

densities decrease down the coast towards Tynemouth where on average there are about 34 people per hectare. The ward of St Mary's at the northern end of the study area is mainly rural and has a density of only 11 people per hectare. The individual populations for wards within the study area along with their respective density in 2011 are detailed in Table 6.1 below.

6.2.2 The statistics from the 2011 UK Census reflect only 'usual residents' and don't account for the large number of tourists and visitors which reside temporarily in the area during the summer months. The coastal frontage in Whitley Bay is predominantly a mixture of hotels and restaurants and consequently the population is likely to be more transient. The other wards within the study area have coastal frontages dominated by residential properties interspaced by recreation areas.

Table 6.1: Population and density by ward in 2011

	All usual residents	Density (persons per hectare)
North East	2,596,886	3.0
North Tyneside	200,801	24.4
St Mary's	8242	11.1
Monkseaton North	9200	53.7
Whitely Bay	9416	60.2
Cullercoats	9202	48.0
Tynemouth	10472	34.1

6.2.3 The Environment Agency's flood map provides an assessment of the risk to the population of North Tyneside from flooding from rivers and the sea. The majority of the coastline within the study area is heavily defended hence, most of the population falls within flood zone 1; land assessed as having less than a 1 in 1000 (<0.1%) annual probability of river and sea flooding in a year. Some properties however are at risk, these include;

- The area of Cullercoats Bay adjacent to the Newcastle University Dove Marine Laboratory and Lifeboat Station, assessed as having a 1 in 200 or greater (>0.5%) annual probability of flooding from the sea.
- The area around Tynemouth Longsands affecting the cafe, assessed as having a 1 in 200 or greater (>0.5%) annual probability of flooding from the sea.
- The area around Fish Quay a mixture of residential and commercial properties, assessed as having assessed as having a 1 in 100 (>1%) or greater annual probability of river flooding and a 1 in 200 or greater (>0.5%) annual probability of flooding from the sea.

6.2.4 The EA flood zones can be viewed on ***Plan 01*** in ***Appendix B***.

Health

6.2.5 North Tyneside is considered to be one of the least deprived areas in North East England;

however significant inequalities still exist within the borough with regard to community health. Indicators from the 2011 UK Census suggest that health in the coastal wards was better than the average for North Tyneside (Table 6.2 below provides a summary of these statistics).

Table 6.2: Health indicators by ward in 2011

	'Bad' or 'very bad' health (% of population)	Long Term Health Problem 'activity limited a lot' (% of population)
North East England	193,438 (7.4%)	285,087 (11.0%)
North Tyneside	13,659 (6.8%)	20,246 (10.1%)
St Mary's	311 (3.8%)	597 (7.2%)
Monkseaton North	330 (3.6%)	542 (5.9%)
Whitely Bay	421 (4.5%)	735 (7.8%)
Cullercoats	571 (6.2%)	889 (9.7%)
Tynemouth	683 (6.5%)	1,048 (10.0%)

6.2.6 Health priorities in North Tyneside identified in the 2012-2013 Annual Health Report include: improving health and well being of families, improving mental and emotional health, addressing premature mortality and reducing hospital and care home admissions. The natural environment and recreation provision can play an important part in helping to achieve these priorities for health.

Recreation and Community Facilities

6.2.7 North Tyneside has extensive areas of coastline and river estuary which provide numerous land and water-based recreational opportunities for the wider conurbation and beyond. An adequate provision for recreation and open space within the borough is recognised for its contribution to the economy, improving the health and well being of the community and enhancing the areas attractiveness for inward investment and tourism. As such, NTC is committed to the protection and enhancement of high quality green space, as well as minimum distance thresholds for its access through the Local Plan.

6.2.8 The coast is one of the borough's most important areas of open space with long stretches of award winning sandy beaches, interspaced by rocky foreshore. An accessible coastline provides opportunities to observe the wealth of biodiversity and geodiversity the area has to offer with key sites along the coast frequented by birdwatchers hoping to glimpse some of the internationally important resident and migratory birdlife. Several locally significant sites for biodiversity (i.e. SNCIs and SLCIs) provide further opportunities for interaction with the environment. These include the dunes adjacent to Tynemouth Longsands, the wetlands at Curry's Point and the cliff top grassland at Brown's Point.

6.2.9 A 13km waterside trail, which follows the length of the borough's coast and riverside, provides an alternative picturesque route for walkers and links up many of the permanent attractions along the coast including; St Mary's Lighthouse, Whitley Bay Mini Golf, Spanish City, the Blue

Reef Aquarium and Tynemouth Priory. This is supplemented by a local footpath/ cycleway/ bridlepath network which provides links to surrounding settlements and attractions further inland. Regional and national green infrastructure links include the Hadrians Cycle Way (NNC72), North Sea Cycle Route (NCN1), Reivers Regional Cycle Route (NCN10) and the Coast to Coast (C2C) cycleway which follows the quayside and terminates at Tynemouth. A promoted Heritage Trail around Cullercoats and Whitley Bay provides links to several local sites of historical and cultural interest.

6.2.10 The beaches and open water along the North Tyneside coast are popular for a number of different water based recreational activities. These include:

- **Kayaking**, with a hire shop and tours operating from Cullercoats;
- **Canoeing and Waveski**, with a local club operating storage and changing facilities on Tynemouth Longsands;
- **Rowing**, with boats being housed at Tynemouth Rowing Club in Priors Haven;
- **Sailing**, largely operating from Priors Haven;
- **Surfing**, with several surf schools and clubs operating from Tynemouth Longsands;
- **Diving**, with Cullercoats Bay and St Mary's island cited as being some of the best local diving areas.[9]; and,
- **Sea Angling**, with 6 large sea angling clubs and around 50 smaller clubs based in the NIFCA region. Several charter vessels operating all year round[10].

6.2.11 The location of those community facilities and sites for recreation detailed above are shown on ***Plan 01*** in ***Appendix B***.

6.3 Local Economy

Employment

6.3.1 The working age population of the borough is currently estimated to be around 128,900. This equates to 64% of North Tyneside's population and is in line with national level proportions. The economically active proportion of the boroughs population is estimated to be 75.6% which is higher than the North East region (74.1%) but lower than the national average (77.3%)[11].

6.3.2 The 2011 UK Census statistics for the coastal wards broadly corresponded to the borough averages for full and part-time employment however, the proportion of people that were identified as being self employed was found to be higher (see Table 6.3, below). This is potentially a reflection of a high number of small independent businesses associated with the

[9] www.aquanorth.co.uk
[10] NIFCA (2012). Recreational Sea Angling – A survey of the district.
[11] North Tyneside Council, 2013. Annual Monitoring Report

tourism industry operating along the coast.

Table 6.3: Employment in 2011

	Full time employment	Part time employment	Self Employed	Unemployed
North East England	707,759 (36.8%)	272,404 (14.2%)	125,746 (6.5%)	103,313 (5.4%)
North Tyneside	61,349 (41.5%)	21,815 (14.8%)	9635 (6.5%)	7304 (4.9%)
St Mary's	2181 (36.9%)	845 (14.3%)	520 (8.8%)	124 (2.1%)
Monkseaton North	2827 (42.6%)	1021 (15.4%)	592 (8.9%)	203 (3.1%)
Whitely Bay	3106 (44.0%)	991 (14.0%)	646 (9.2%)	299 (4.2%)
Cullercoats	2532 (38.6%)	984 (15%)	489 (7.5%)	215 (3.3%)
Tynemouth	3392 (43.3%)	1032 (13.2%)	732 (9.4%)	254 (3.2%)

Tourism Industry

6.3.3 The North Tyneside coast and its attractions are an important element of the borough's economy, drawing visitors from across the North East and beyond. The recent downturn in the national economy initially had a major effect on the tourist industry, however more recently this declining trend appears to be changing. Day visits to the borough increased from 5.1 million in 2011 to 5.21million in 2012 and are in part attributed to an increase in the number of "stay-cations". These numbers remain short of the 5.8 million estimated day visits in 2010. The value of tourism to the North Tyneside Economy was estimated to be £268.2 million in 2012 supporting around 3,800 full-time, part-time and seasonal jobs in the tourism sector[12].

6.3.4 Permanent attractions located along the coast include; St Mary's Island and Lighthouse (with over 20,000 visits per annum, see Figure 6.1) the Blue Reef Aquarium, Tynemouth Priory and Castle (with 17,519 visits in 2012[13], see Figure 6.2), Spanish City, Lost World Adventure Golf and several Blue Flag beaches. The local connection with many famous artists can be explored via the Cullercoats Art Walk, a promoted trail around Cullercoats Bay and surrounding streets. The location of the sites referred to above can be viewed on ***Plan 01*** in ***Appendix B***.

6.3.5 The coast is also host to a number of temporary events during the year designed to increase visitor numbers and boost the local economy. These include:

- **Mouth of Tyne Festival** – a live music event taking place over a weekend in July and based in the grounds of Tynemouth Priory and Castle;
- **Whitley Bay Film Festival** – a festival which celebrates film and art in unique locations around Whitley Bay. The festival takes place in August;
- **10k Road Race** – Now in its tenth year this annual event takes place on Easter Sunday. The route of the run starts at the Parks Sports Centre in North Shields

[12] North Tyneside Council, 2013. Annual Monitoring Report
[13] Visit England Annual Survey of Visits to Visitor Attractions

before heading down to the historic Fish Quay, up a challenging climb to Tynemouth Priory and Castle and then along the coast to finish at St Mary's Lighthouse;

- **Proper Food and Drink Festival** – over 100 stalls of artisan foods situated on the Spanish City redeveloped boulevard in Whitley Bay. Held over a weekend in June;
- **Tynemouth Classic VW Rally** – a one day show in the heart of Tynemouth village, organised by local Volkswagen enthusiasts and Tynemouth business owners. Now in its 4th year, the event takes place at the end of July;
- **Bernica Festival** – the festival features some of the regions brightest musical talent. The plaza at Spanish City plays host to a one day free event at the end of August;
- **Spanish City Triathlon** – a 750m open swim, 5km run and 20km bike race starting at the Spanish City and making use of the Links promenade and coastal roads (A193). The event takes place in mid August;
- **Whitley Bay Sandcastle Competition** – a free annual family event taking place at the end of July on Whitley Bay beach.

Fishing and Port Based Industries

6.3.6 Fishing and its associated industries are synonymous with the areas of Cullercoats and the Fish Quay and have been a constant presence for over 700 years. The once vibrant white fishing industry has suffered significant decline in recent years and despite the main fishing quay on the River Tyne remaining the biggest prawn port in England, this has lead to industrial dereliction and the need for change. NTC are committed to supporting the remaining industrial areas through the Local Plan and recognise the distinctive 'gritty' character that the fishing industry brings. The Council however, intends to support these industries alongside a programme for regeneration and mixed use development in areas such as the Fish Quay.

6.3.7 Counts released by the Office for National Statistics in 2012 showed there were 358 vessels registered to ports on North Shields, employing 656 full time and 30 part time fishermen. Landings in 2012 for white fish and shellfish totalled 3,300 tonnes and were worth approximately £7.6 million[14].

6.3.8 The River Tyne remains a commercial river with shipbuilding, offshore fabrication, fishing and port related industries still prevalent on the north bank. The Port of Tyne, the only passenger port in the region, supports regular passenger services to Northern Europe and provides a significant contribution to the regional economy. In 2011 the Port of Tyne, along with other sites on the River Tyne North Bank, were awarded Enterprise Zone (EZ) status. The status ensures a range of financial and planning incentives for businesses involved in the manufacture and development of low carbon and off shore technology. The Enterprise Zone is expected to create over 7000 new jobs by 2022[9].

[14] Office for National Statistics, 2012. UK Sea Fisheries Annual Statistics 2012

Figure 6.1 St Mary's Island and Lighthouse

Figure 6.2 Tynemouth Priory and Castle

6.4 Transport

Road

6.4.1 The main road to the coast from the west (Newcastle City Centre) is the A1058 Coast Road, which is one of the busiest routes in the borough, carrying an average 60,000 vehicles per day. From the routes terminus north of Tynemouth, the seafront can be accessed via the A193 (The Links) or numerous minor roads, including the Promenade and Grand Parade which run in a north-south direction immediately adjacent to the seafront.

6.4.2 Current defence provision ensures that the majority of the road network within the study area is at a low risk from flooding and erosion (residing with the <0.1% risk zone). An exception to this is the Western Quay which for the most part falls within an area assessed as having a 1 in 100 (>1%) or greater annual probability of river flooding and a 1 in 200 or greater (>0.5%) annual probability of flooding from the sea.

6.4.3 There are a number of public car parks immediately adjacent or within close proximity to the sea front including at; St Mary's Island (chargeable, 60 spaces), Brierdene (chargable, 244 spaces), Dukes Walk (chargable, 43 spaces), the Mini-golf/Rendezvous Cafe (chargable,24 spaces), Bournmouth and Eastbourne Gardens (chargable, 230 and 69 spaces), Front Street, Cullercoats (free, 16 spaces), Beaconsfield, Grand Parade (chargable, 182 spaces), Priors Haven (chargable, 81 spaces) and the Spanish Battery (chargable, 50 spaces). The car park at Brierdene is at immediate risk due to erosion of the undefended soft boulder clay cliffs upon which it is built.

Rail

6.4.4 Tynemouth and Whitley Bay are both served by a Metro line which provides regular (every half an hour) connections to the main interchange at Newcastle Central Station, with subsequent links to the East Coast Mainline and Newcastle Airport. The Metro line follows a north-south direction along the coast, set back around 500m from the seafront and with stations at North Shields, Tynemouth, Cullercoats, Whitley Bay and Monkseaton. Attractions in the northern part of the study area (St Mary's Lighthouse) are approximately 3km (30 minute walk) from the closest Metro station.

6.4.5 Current defence provision ensures the Metro line and stations along the coast are at a low risk of flooding and erosion (residing with the <0.1% risk zone).

Bus

6.4.6 Regular buses to Tynemouth and Whitley Bay from Newcastle City Centre run up to every 15 minutes and are operated by Go North East, Arriva and Nexus. Bus stops close to the coast are located within Tynemouth Village (adjacent to Tynemouth Castle and Priory), on the Grand Parade (close to the Grand Hotel and the boating lake), on Marden Avenue (adjacent to Cullercoats Bay), on Park Avenue (adjacent to Whitley Park) and on The Links (close to Spanish City, Rendezvous Cafe, Briar Dene and the Cemetery).

Port

6.4.7 The Port of Tyne, whilst located 1.5km to the south-west of the study area, is a key part of the transport infrastructure and is necessary to realise the growth potential of the River Tyne (see Figure 2.1 below). The Port is an international passenger terminal welcoming around 623,000 cruise and ferry passengers to the region in 2013. This equates to an estimated £54m input into the regional economy, supporting 1,700 jobs[15].

6.4.8 The Port also operates a bulk and conventional cargo business handling, coal, wood-pellet, grain, scrap, steel and other cargos. It is currently the UKs second largest importer of coal, handling around 4.9 million tonnes in 2013[16]. The Port is also leading developments in renewable energy and meeting the needs of the emerging offshore wind industry.

6.4.9 The main barrier to achieving growth of the Port is ensuring that the dredging of the river meets the needs of the business.

Figure 6.3 The River Tyne from Fish Quay, with the Port of Tyne in the distance

[15] Port of Tyne (2014) http://www.portoftyne.co.uk/news/port-of-tyne/voyager-of-discovery-comes-to-port-of-tyne
[16] Port of Tyne (2014) http://www.portoftyne.co.uk/about-us/

6.5 Biodiversity, Flora and Fauna

6.5.1 There are a diverse range of natural environments along the shoreline, many of which are recognised for their local, national and international importance through statutory and non-statutory designations.

European Protected Sites

6.5.2 Within the study boundary there is one Special Protection Area (SPA) (or 'European Marine Site') as classified under EU Directive 79/409 on the Conservation of Wild Birds (the '*Birds Directive*'). The same area is listed as a Wetland of International Importance, or Ramsar site (as designated under the Ramsar Convention, 1973). Table 6.4 below, provides a description of the sites and ***Plan 02*** in ***Appendix B*** shows their location.

Table 6.4: Special Protection Areas and Ramsar sites within the study area

Name	Description (adapted from site citations, JNCC)	Management Areas
Northumbria Coast SPA UK9006131 (1,107 ha)	The Northumbria Coast SPA includes much of the coastline between the Tweed and Tees Estuaries in north-east England. The site consists of mainly discrete sections of rocky shore with associated boulder and cobble beaches. In summer, the site supports important numbers of breeding Little tern *Sterna albifrons,* whilst in winter the mixture of rocky and sandy shore support large numbers of Ruddy turnstone *Arenaria interpres* and Purple Sandpiper *Calidris maritime.* Disturbance by tourists in the summer can affect the breeding success of the Little turns, although disturbance can also occur in the winter when numbers of wintering wildfowl and waders are concentrated on the coast.	MA24, MA25, MA26, MA27
Northumbria Coast Ramsar UK11049 (units at St Mary's Island, Brown's Point, North Point, Sharpness Point, North Pier and South Pier)	The Northumbria Coast includes much of the coastline between the Tweed and Tees estuaries, consisting of mainly discrete sections of rocky shore with associated boulder and cobble beaches. These support a rich algal flora and associated fauna and form an important feeding area for wading birds. The areas of sandy beach within the site support a flora which includes Marram *Ammophila arenaria* and Sea sandwort *Honkenya peploides*. Other noteworthy fauna supported during the breeding season include the Great cormorant *Phalacrocorax carbo carbo,* Black-legged kittiwake *Rissa tridactyla tridactyla,* and the Arctic tern *Sterna paradisaea.* Species with peak counts include the European golden plover *Pluvialis apricaria apricaria*, (spring/autumn) and Common eider *Somateria mollissima mollissima* and Sanderling *Calidris alba* (winter).	MA24, MA25, MA26, MA27

Northumbria Coast SPA

6.5.3 A key sub-feature within the Northumbria Coast SPA is the presence of rocky shore with associated boulder and cobble beaches. These areas and the strandline support high densities of invertebrate and are an important food source for migratory waterfowl. Purple sandpiper *Calidris maritime*, found within the SPA, are almost entirely restricted to the rocky shore area where they feed on the variety of marine invertebrates, including muscles, winkles and dog whelks. The larvae, pupae and adults of the kelp fly found in banks of rotting seaweed on the strandline, are also foraged by this species. The diet of the Ruddy turnstone *Arenaria interpres* is more varied but comprises mainly of winkles, shrimps and barnacles found on the seaweed covered rocks. Both species roost on the mainland shore or on manmade structures along the coast, such as the River Tyne South Pier, during high tide.

6.5.4 The Northumbria Coast SPA also supports an internationally important population of breeding Little turn *Sterna albifrons.* These species breed in small colonies on coastal sand or shingle substrates, sometimes nesting only meters from the high-tide mark. Little tern forage in shallow inshore waters for small surface dwelling marine fish, crustaceans and invertebrates however the majority of feeding occurs offshore and outside of the European marine site[17].

6.5.5 Natural England's *Supplementary Advice* document to the SPA[12] identifies a number of targets for achieving favourable condition of the site. These include no decrease in the extent of rocky shore and associated bolder and cobble beaches, sandy beaches and shallow inshore waters due to their importance for wintering and breeding birds. Similarly, no loss of artificial high tide roost sites such as the structures aforementioned. Disturbance of the birds, attributable to human activities, is also highlighted as a constraining factor. This may be as a result of noise (i.e. recreation activities taking place on the beach) or a visual disturbance (i.e. presence of structures obstructing view lines and preventing early detection of predators).

6.5.6 The extent of physical loss to sandy beach and intertidal rocky shores can be greatly influenced by changes to coastal processes associated with coastal defence and development. Changes to sediment deposition rates could result in the loss of sandy beach or lead to a smothering of rocky shore habitat. Conversely, the opposite could apply.

6.5.7 Another important factor for consideration, particularly in relation to the loss of intertidal rocky shore habitat is the effect of 'coastal squeeze'. Coastal squeeze occurs due to sea level rise and is a consequence of the low water mark migrating landwards whilst the high water mark remains static or migrates landwards more slowly. This leads to a gradual loss or 'squeeze' of the intertidal area. Coastal squeeze can arise on a defended coast where the foreshore is backed by a static structure such as a sea wall or on an undefended coast where the relative resistance of the geology results in the slow recession of a cliff face.

[17] English Nature (now Natural England) (2000). Northumbria Coast European Marine Site – English Nature's advice given under Regulation 33(2) of the Conservation (Natura Habitats & c.) Regulations 1994.

Rocky Foreshore Coastal Squeeze Study

6.5.8 Following publication of SMP2 a rocky foreshore coastal squeeze study[18] was undertaken for the Northumberland and North Tyneside Coast. The study aimed to quantify the loss of rocky reef and foreshore due to sea level rise to the years of 2025, 2055 and 2105. Climate change projections and relative sea level rise at a 50 percentile probability were used to calculate the potential habitat loss (due to submergence), the potential gains to habitat (due to erosion) and the net loss/gain over the three epochs.

6.5.9 Summary statistics for Policy Development Zone 6 (PDZ6), which for the most part represents the coverage of the Coastal Strategy area (excluding Seaton Sluice to Hartley Cove), suggest a net change in rocky reef and foreshore habitat of 9ha between the baseline (2010) and 2105. The majority of this change occurs in the third epoch (6.1ha net loss between 2055 and 2105). Table 6.5 below provides a summary of the estimated changes to the extent of rocky shore habitat identified in the study.

Table 6.5 Changes to the extent of rocky shore habitat between 2010 and 2105

	Epochs			
	Baseline	***Baseline to 2025***	***Baseline to 2055***	***Baseline to 2105***
Total area (ha)	70.1	69.4	67.2	61.1
Loss due to submergence (ha)	-	- 1.5	- 5.2	- 12.7
Gain due to erosion (ha)	-	+ 0.8	+ 2.2	+ 3.7
Net change (ha)	-	- 0.7	- 2.9	- 9.0

Sites of Special Scientific Interest

6.5.10 The principal national designations of ecological and/or geological importance are Sites of Special Scientific Interest (SSSIs). SSSIs represent some of the country's very best wildlife and geological sites and offer protection to flora, fauna and geological features of significance.

6.5.11 SSSI's are afforded protection under the Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CROW) Act 2000 and the Natural Environmental and Rural Communities (NERC) Act 2006. Local Authorities have a duty under this legislation to further, and enhance, the nature conservation interests of these sites whilst carrying out their statutory functions.

6.5.12 Two SSSI are found within the study boundary with all units assessed as being in favourable condition. A description of these sites is provided in Table 6.6 below and their location presented on ***Plan 02*** in ***Appendix B***.

[18] Royal Haskoning (2010) Northumbria and North Tyneside Rocky Foreshore Coastal Squeeze Study.

Table 6.6: Sites of Special Scientific Interest (SSSI) within the study area

Name	Description (adapted from site citations, NE)	Management Areas
Tynemouth to Seaton Sluice SSSI (Units 1011137, 1011138, 1011139) *Geological*	The coast from Tynemouth to Seaton Sluice provides one of the best exposures of rocks belonging to the Upper Carboniferous Coal Measures in Great Britain and is cited mainly for its geological interests. This section of coast however, also supports a significant proportion of the internationally important winter populations of purple sandpiper, sanderling, and turnstone. In addition there are locally important numbers of knot, ringed plover and golden plover.	MA24
Northumberland Shore SSSI (Units 1010081, 1010095, 1010102, 1010104) *Ecological*	The Northumberland Shore SSSI includes most of the coastline between the Scottish border and the Tyne Estuary and consists largely of sandy bays separated by rocky headlands, with wave-cut platforms backed by dunes or soft and hard cliffs. Discrete areas of estuarine intertidal mudflats and saltmarsh are also included. The SSSI provides an important wintering ground for shore birds, and is of international or national significance for six species including purple sandpiper, turnstone, sanderling, golden plover, ringed plover and redshank. The Northumberland Shore as a whole is used by a wide variety of other shorebirds in winter, including curlew, oystercatcher, dunlin, knot, bar-tailed godwit and lapwing. Arctic and little turns breed on the shore during the summer. The inter-tidal zone is also favoured all year round as a feeding area for eiders, which are present in nationally important numbers.	MA24, MA25, MA26, MA27

Marine Conservation Zones

6.5.13 Marine Conservation Zones (MCZs) are a type of Marine Protected Area. They ensure that areas that are important to conserving the diversity of nationally rare or threatened habitat and/or species, and/or are representative of the biodiversity in our seas, are protected. MCZs are created under the Marine and Coastal Access Act 2009 (Part 5) and exist alongside other European marine sites (SACs and SPAs), SSSIs and Ramsar sites to form an ecologically coherent network of marine protected areas.

6.5.14 Although no adopted MCZs fall within the study area, a potential candidate site from Coquet to St Mary's is currently under consideration for the second tranche of MCZs. Public consultation on the proposals is likely to start in early 2015 with designation of the accepted sites later in the year. A description of the site is provided in Table 6.7 below and ***Plan 02*** in ***Appendix B*** shows its location.

Table 6.7: Candidate Marine Conservation Zones within the study area

Name	Description	Management Areas
Coquet to St Mary's Island Candidate MCZ	The Coquet to St Mary's Candidate MCZ stretches to 198sqkm along the Northumberland coastline and includes Coquet Island, important for breeding and foraging seabirds and grey seals, alongside St Mary's important for its rocky reefs and crustaceans. The sea floor, which reaches 30 meters in depth, consists of a mosaic of habitats. These include three different rocky habitats, interspersed with mixed sediments, unique shoreline underboulder communities and estuarine rocky habitats. All of these support thousands of seabirds and marine mammals, including 90% of the UK Roseate tern population, harbour porpoises, white-beaked dolphins, and species of whale.	MA24, MA25

Voluntary Marine Nature Reserves

6.5.15 Voluntary Marine Nature Reserves (VMNRs) are designated to conserve marine flora and fauna and geological features of interest, while providing opportunities for the study of marine systems. VMNRs (unlike MNRs) have no statutory basis and are established by agreement between non-governmental organisations, stakeholders and user groups. One VMNR can be found within the study area which includes the seabed around St Mary's island and the cliff tops at Curry's Point (MA24/MA25). The introduction of the Marine and Coastal Act 2009 has meant that many MNRs/VMNRs will be replaced by Marine Conservation Zones, a possibility should the Coquet to St Mary's Candidate MCZ be adopted in 2015.

Local Nature Reserves

6.5.16 Local Nature Reserves (LNRs) are places of importance for wildlife or geology that hold a special local interest. They offer opportunities for education as well as public enjoyment. Principal local authorities are able to designate LNRs under Section 21 of the National Parks and Access to the Countryside Act 1949, as amended by Schedule 11 of the Natural Environment and Rural Communities Act 2006. Parish and Town Councils may also declare LNRs however only where powers have been delegated to allow them to do so. Management of the sites is often passed to voluntary conservation bodies such as the county Wildlife Trust and protection is usually given by local authorities through the Local Plan.

6.5.17 One LNR falls within the study area and a description of this site is provided in Table 6.8 below. ***Plan 02*** in ***Appendix B*** shows its location.

Table 6.8: Local Nature Reserves within the study area

Name	Description	Management Areas
St Mary's Island LNR (see Figure 6.5)	Connected to the mainland by a causeway that can be crossed at low tide, the island is home to St Mary's Lighthouse. The rock pools are home to a wonderful array of marine life, while seabirds can be observed from the island itself. The wetland is particularly important as a high tide roost for golden plover, oystercatcher, curlew and redshank, and as an important landfall for passing migrants in spring and autumn.	MA24, MA25

Local Wildlife Sites and Sites of Local Conservation Interest

6.5.18 Local Wildlife Sites (LWS) (formally known as Sites of Nature Conservation Interest (SNCI)) and Sites of Local Conservation Interest (SLCI) are non-statutory designated sites that recognise a variety of habitats of botanical, geological, ornithological and other wildlife interest. Seven sites fall within the study boundary, as detailed in Table 6.9 below. ***Plan 02*** in ***Appendix B*** shows their location.

Table 6.9: Local Wildlife Sites (LWS) and Sites of Local Conservation Interest (SLCI) within the study area

Name	Description	Management Areas
Curry's Point and Wetlands LWS (see Figure 6.4)	Wetland, cliffs, scrub and grassland	MA24, MA25
Brierdene LWS	Scrub and grassland	MA25
Tyne Entrance LWS	Scrub and grassland	MA26, MA27
River Tyne (tidal Extent) North Tyneside Section LWS	Scrub and grassland	MA27
Tynemouth Boating Lake SLCI	Wetland and parkland	MA26
Brown Point Clifftop Grassland SLCI	Grassland	MA25, MA26
Tynemouth Longsands SLCI (see Figure 6.5)	Sand Dunes, maritime cliff and coastal grassland	MA26

Figure 6.4 Tynemouth Longsands SLCI, sand dunes and coastal grassland

Figure 6.5 Curry's Point and Wetlands LWS and St Mary's Island LNR

National Biodiversity Action Plans

6.5.19 The UK government produced 'Biodiversity: the UK Action Plan' in 1994 with the aim of conserving and enhancing biological diversity in the UK. Details of National Biodiversity Action Plan (BAP) habitats falling within the study area are provided in Table 6.10 below.

Table 6.10: National Biodiversity Action Plans of relevance

Name	Description (adapted from JNCC descriptions)	Threats/Opportunities
Habitat Action Plans (HAPs)		
Maritime Cliffs and Slopes BAP Habitat	Maritime cliffs and slopes comprise sloping to vertical faces on the coastline where a break in slope is formed by slippage and/or coastal erosion. Vegetation of a strictly maritime nature occurs where exposure to the waves and winds is at its greatest. In less exposed locations maritime grasslands may occur comprising of red fescue *Festuca rubra*, thrift *Armeria maritime* and sea plantain *Plantago maritime*. Soft cliffs provide important breeding sites for sand martins *Riparia riparia*, which burrow into soft faces exposed by recent slippages, but are particularly important for invertebrates as they provide a suite of conditions which are rarely found together in other habitats.	• Erosion of soft cliffs. Cliff top vegetation may be destroyed and squeezed between cultivated land. • Trampling by the public/livestock leading to erosion and disturbance of birds. • Coastal protection works impeding natural processes. • Coastal Management Plans provide an opportunity to address issues.
Coastal Sand Dunes BAP Habitat	Coastal sand dunes develop where there is an adequate supply of sand (sediment within the size range 0.2 to 2.0mm) in the intertidal zone and where onshore winds are prevalent. The critical factor is the presence of a sufficiently large beach plain whose surface dries out between high tides. Sand dunes support a wide range of plants and animals including some species which have very specialised requirements. Flora of the regions dunes include; bloody crane's-bill *Geranium sanguineum*, burnet rose *Rosa pimpinellifolia*, purple milk-vetch *Astralagus danicus* and lesser meadowrue *Thalictrum minus*. Sand dunes are also an important habitat for species such as skylark and meadow pipit. The invertebrate found on many dunes systems are of note and include species such as the dark green fritillary and grayling butterflies. 15% of the English sand dune resource is found in the North East.	• Recreation pressures on dunes causing erosion and a loss of plant communities. • Increases in sea-level leading to more erosion at the base of the dunes and less material for dune formation. • Stabilisation at the ack of the dunes from road construction can prevent the backward movement of the dunes and with sea level rises can result in the systems being squeezed and lost. • Sand extraction removing sediment which would otherwise contribute to dune formation.

Local Biodiversity Action Plans

6.5.20 To ensure actions and objectives of the national plans for species and habitats are translated into targets for local action, Local Biodiversity Action Plans (LBAPs) have also been produced. LBAPs have the added value of identifying and protecting habitats and species that may not be covered under the UKBAP due their local, if not national, importance. Habitat and Species Action Plans of relevance to the Strategy as identified in the Newcastle and North Tyneside LBAP (2012) are detailed in Table 6.11 below.

Table 6.11: Local Biodiversity Action Plans of relevance

Name	Description	Relevant Targets
Habitat Action Plans (HAPs)		
1. Buildings and Structures	Buildings and structures provide important replacement habitat for a range of wildlife, particularly for breeding and shelter. Whilst a number of structures occur within recognised LWSs, a significant number of buildings with wildlife interest occur outside of designated conservation sites. Buildings and artificial structures adjacent to the River Tyne and coast support breeding populations of kittiwake and nesting ledges for fulmar.	• Ensure existing kittiwake sites are protected • Secure or create nesting habitat for kittiwakes along the River Tyne to enable existing colonies to expand or move
2. Estuary and Coastal Habitat	Coastal habitats include open sea, offshore islands and reefs, intertidal rocky foreshore areas and sand beaches, sand dunes, sea cliffs and cliff top areas along the coast between St Mary's Island, Whitley Bay and North Shields Fish Quay. North Tyneside's intertidal habitat provides important winter feeding and roosting habitats for numerous wading birds including purple sandpiper and turnstone, sanderling, ringed plover, golden plover, redshank, lapwing, dunlin and curlew. Significant numbers of eider also feed in the intertidal area all year round whilst the mouth of the River Tyne is important for the number of terns that feed there during the early autumn. St Mary's Island is particularly important for the roseate tern whilst steep cliffs along the coast provide breeding sites for kittiwake, fulmar and rock pulpit. There is estimated to be over 20ha of intertidal mud, sand and rock foreshore habitats, 9.9ha of fragmentary sand dune habitats, 3ha of maritime cliff and 0.1ha of coastal grassland. The main issues of concern include coastal squeeze, recreation pressure, inappropriate management (excessive beach cleaning), water quality/pollution, dredging and climate change.	• Ensure no net loss of mudflats and saltmarsh other than by natural processes • Create two high tide wader roost sites and manage existing sites appropriately • Plan dune grasses to regenerate extended dune system at Tynemouth Longsands • Access improvements incorporated along Tynemouth Longsands to aid dune regeneration • Create new priority habitats at St Mary's headlnad

6.6 Water

Coastal Waters

6.6.1 Coastal water quality monitoring is undertaken for the purposes of the European Union Bathing Water Directive[19] (BWD) 2006 at five locations along North Tyneside's coastline. The majority of locations have achieved the higher standard for the last 5 years with the exception of Tynemouth Cullercoats. Table 6.12 below provides a summary of the results.

Table 6.12: Bathing Waters annual compliance results 2010-2014

Monitoring Point	Annual Compliance Results				
	2010	***2011***	***2012***	***2013***	***2014 (latest in season June 14)***
Whitley Bay	Higher	Higher	Higher	Higher	Higher
Cullercoats	Minimum	Higher	Minimum	Higher	Higher
Longsands North	Higher	Higher	Higher	Higher	Higher
Longsands South	Higher	Higher	Higher	Higher	Higher
King Edwards Bay	Higher	Higher	Higher	Higher	Higher

6.6.2 The Coastal waters are susceptible to pollution from a number of sources including Combined Sewer Overflows (CSOs) and runoff from agricultural, highway and urban areas. The majority of pollution enters coastal waters through rivers and culverts from these inland sources.

6.6.3 Since 1976 sewerage flows from the coastal towns of Tynemouth, Cullercoats and Whitley Bay have been passed to the Howdon Sewage Treatment Works on the north bank of the River Tyne through the Coastal Interceptor Sewer (CIS) system. Strategic pumping stations for this system are located at Browns Point, North Point and Sharpness Point. In times of excess stormwater overflow from the CIS can be discharged directly to the sea through a number of short CSOs along the coastal frontage which extend to around the mean low water mark. When this happens, coastal water quality can be negatively affected.

6.6.4 Three of the four beaches along the coastline are currently awarded Blue Flags in recognition of high environmental and quality standards. These include Whitley Bay, Tynemouth Longsands and Tynemouth King Edwards Bay. All beaches received a 2014 Quality Coast Award in recognition of high water quality and high standards of maintenance.

Surface Water

6.6.5 There are two main surface watercourses within the study area. At the northern end of the coast, Briardean Burn outflows into the sea south of Curry's Point and is assessed as having poor ecological quality status. At the southern end of the coast is the tidally influenced River Tyne. This watercourse is assessed as having moderate ecological quality and the current

[19] EU Directive 2006/7/EC concerning the management of bathing water quality and repealing Directive 76/160/EEC

status for chemical quality is listed as a fail.

6.6.6 These are the only water courses within the study area to have been classified by the Environment Agency through its River Basin Management Plan (RBMP), which implements requirements of the Water Framework Directive (WFD). A small stream flowing through The Links at Duchess Dene is also found within the study area however, as this water course is not classified through the RBMP, its ecological status is unknown.

Groundwater

6.6.7 Aquifer designation data supplied by the Environment Agency is based on geological mapping provided by the British Geological Survey (BGS). From 1st April 2010, the Environment Agency has used aquifer designations that are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems.

6.6.8 The majority of North Tyneside is designated as a 'Secondary A' bedrock aquifer (formally classified as minor aquifers); these are permeable layers capable of supporting water supplies at a local rather than strategic scale and in some cases forming an important source of base flow to rivers.

6.6.9 There are two designated areas of 'Principle' bedrock aquifer (formaly classified as major aquifers); these are the Permian Limestones found at Tynemouth and Marden in Whitley Bay. These are layers of rock or drift deposits that have high intergranular permeability meaning they have the potential to provide high water storage. They may also support water supply and river base flow on a strategic scale. Groundwater is not abstracted for public supply in North Tyneside, but it remains a potential resource.

6.7 Air, Noise and Light

Air

6.7.1 Good air quality is important for the environment and keeps people, plants and animals healthy. There are three air quality monitoring stations located within North Tyneside, each carrying out continuous real time monitoring for specific pollutants including; nitrogen dioxide, particulates and sulphur dioxide.

6.7.2 Annual reporting of air quality within the borough has been carried out since 2004. As of April 2012 all annual objectives for air quality have been met and there has been no requirement to declare any Air Quality Management Areas (AQMAs).

Noise/Vibration

6.7.3 Noise and vibration are forms of pollution. Where levels are excessive, they can become a source of irritation, affecting quality of life and the peaceful enjoyment of the environment, as well as the potential to disturb local wildlife.

6.7.4 The largest source of noise and vibration within the study area is the main transport route running adjacent to the coastline. Noise can also be associated with the various bars and clubs operating along the front in Whitely Bay, as well as the numerous recreational activities that take place throughout the year along the coast.

Light

6.7.5 Light pollution is excessive, misdirected or obtrusive artificial light which has the effect of brightening the night sky and inhibiting the observation of stars. Studies by the Campaign to Protect Rural England (CPRE) suggest that the problem of light pollution across the UK is getting worse with the amount of truly dark sky dropping from a sixth of the country to just over a tenth (11%) between 1993 and 2000.

6.7.6 Newcastle and North Tyneside Councils are currently under taking a £250m investment programme to replace 80% of the boroughs lighting columns with modern alternatives. The new columns are more energy efficient and direct light downwards to reduce the amount of light pollution. Areas along the coast will benefit, particularly St Mary's Island which is becoming an increasingly popular place for dark sky photography and when the conditions are right, a place to spot the Northern Lights (aurora borealis).

6.8 Land Use

6.8.1 North Tyneside is one of five metropolitan districts within the county of Tyne and Wear. It is situated on the mouth of the Tyne, with Newcastle City to the west, the North Sea to the east and bounds the County of Northumberland to the north. The main coastal settlements in North Tyneside include North Shields, Tynemouth, Whitley Bay and Monkseaton.

6.8.2 The coast, including the river estuary, is mostly backed by urban areas with the coastal strip generally maintained in an open state. A mixture of housing, retail, recreation and tourist facilities interface with designated areas of built and natural conservation, some of which are of national and international importance. Current land use policy emphasises the need to integrate growth and development at the coast with the protection and enhancement of the built and natural environment (AS/1.5c). This includes the area's heritage assets at Tynemouth, Cullercoats, Whitley Bay and St Mary's Island and the Northumbria Coast SPA and Ramsar site.

6.8.3 Attractions along the coast are some of the most popular tourist destinations in the borough and help to support a significant tourist industry worth around £249million a year. Current development policy places an emphasis on maintaining and enhancing the open character of the coast, typified by areas such as The Links and Whitley Bay, whilst promoting the range and provision of tourist and visitor attractions and accommodation (AS/1.5b). The majority of the coastal strip is in public ownership and has been subject to a £60million programme of regeneration aimed at reinvigorating and improving the image of the area. Projects include;

- **Cullercoats Bay** – improvements to Victoria Crescent, namely narrowing the highway and increasing the width of the footpath to allow more space for pedestrians

and businesses with outdoor seating. Public realm improvements including new seating and cycle hoops. A new toddler play area and picnic area. New interpretation boards as part of the coastal heritage trail. Refurbishments to the boat park and the provision of more car parking spaces. See ***Figure 6.6***.

- **Tynemouth Longsands** – Improvements to the access road and footway leading onto the beach, including provision of a turning point for vehicles. New handrails and lighting in character with the area.

- **Spanish City** - the creation of a high quality public realm around the Spanish City attraction, a former fairground and ballroom. Restoration of the Spanish City Dome and buildings.

6.8.4 To the south of the study area, improvements to the North Shields Fish Quay as a result of grants from the £1m Townscape Heritage Initiative have greatly improved its attraction. Historically the area embraced a range of land uses including dock yards, warehousing and port related activities such as smokehouses. Much of the earlier sea related industry left during the later part of the 20th century as the fishing industry was cut back due to the decline in North Sea stocks. The area lay in a state of dereliction and under-occupancy until a strategy for regeneration was implemented. Projects included refurbishment of several landmark buildings including the Dock Masters Building and Barrack Building at Clifford's Fort. In 2014 a successful bid to the Heritage Lottery Fund also secured a £245,000 grant to restore the Tynemouth Voluntary Lifeboat Brigade's Watch House and museum at the Spanish Battery.

6.8.5 Although the fishing industry has diminished significantly over the years, the River Tyne remains a commercial river with offshore fabrication, fishing and port related industries. The Port of Tyne is the only passenger port in the region and provides regular passenger services to Northern Europe. These activities require adequate lengths of frontage for laying up-facilities, with some mineral and waste disposal also requiring access to water-borne transport. Current policy is to support and increase the economic activity related to development at the Port of Tyne (AS1.3d) as well as supporting fishing industry related employment within the Fish Quay area (AS/1.4b). See ***Figure 6.7***.

6.8.6 The Draft Local Plan (NTC, 2014) recognises that a sufficient supply of new housing is crucial to the social and economic future of North Tyneside. The overall level of housing delivery that will be required by 2030 is estimated at 16,272 net additional homes (reducing to 12,000 through collaboration with neighbouring Councils). Potential developments sites to meet this requirement have been identified in NTC's background paper to the draft Local Plan (2013). Those falling within the study area include:

- Esplanade, Whitley Bay (22 homes)
- Whisky Bends, Promenade, Whitely Bay (5 homes)
- High Point Hotel, Promenade, Whitley Bay (15 homes)
- Tanners Bank East, North Shields (42 homes)

Figure 6.6 Cullercoats Bay

Figure 6.7 Fish Quay, North Shields

Contaminated Land

6.8.7 There is one area of historic landfill within the study boundary. Details are provided in Table 6.13 below.

Table 6.13: Historic landfill areas within the study area

Name	Site address	Last waste received	Type of waste
Beaconsfield	Grand Parade, Cullercoats	Unknown	Inert

6.9 Landscape/Seascape and Visual Amenity

National Character Areas

6.9.1 National Character Areas (NCAs) divide England into 159 distinct natural areas defined by a unique combination of landscape, biodiversity, geodiversity and cultural and economic activity. The profiles for each area provide a description of the natural and cultural features that shape the landscape, how the landscape has changed over time, the current drivers for change, and a broad analysis of each area's characteristics and ecosystem services. Two NCAs fall with the study area, these are:

- **NCA 13**: South East Northumberland Coastal Plain; and,
- **NCA 14**: Tyne and Wear Lowlands.

6.9.2 A description of the key characteristics and opportunities within each NCA that are of relevance to the study area is provided in Table 6.14 below:

Table 6.14: National Character Areas within the study area

Name	Key Characteristics	Opportunities
NCA 13	• A wide, low-lying coastal plain with widespread urban and industrial development, extending north from the urban edge of Newcastle across the coastal plain, with mining towns and villages merging into rural landscape towards the north. • Sweeping sandy beaches and rocky headlands remain within largely developed coast, along with mudflats and salt marshes in river estuaries. • Large, open arable fields, served by large-scale farmsteads, are interspersed with pastures on the poorer reclaimed soils. Fields are bounded by post-and-wire fences or by low and gappy hedges. • Frequent areas of open water and wetland in areas of mining subsidence and as features within restored landscapes.	• To conserve and enhance coastal and estuarine habitats and species, and allow habitats to adapt to coastal change, to improve coast's value for wildlife, geodiversity, recreation, archaeology and sense of place. (SEO2) • Enhance the recreational opportunities by addressing key gaps in the access network, such as across major roads and rivers, enhancing public transport, protecting and improving water quality and providing interpretation of key geological and historic sites. (SEO4)

Name	Key Characteristics	Opportunities
NCA 14	• Undulating landform incised by the river valleys of the Tyne and the Wear and their tributaries. • Widespread urban and industrial development with a dense network of major road and rail links and the spreading conurbations of Tyneside in the north. Dispersed towns and villages further south. • Strong legacy of mining, much restored to agriculture, forestry, industry, housing and amenity uses such as country parks, linking urban areas with countryside and coast by transforming wagonways to cycle routes and footpaths. • Industrial prosperity reflected in the large number of 18th- and 19th-century country houses, set within parkland in the vicinity of major settlements. • Small area of coastline between Whitley Bay and South Shields consisting of sand, rocky foreshore habitats and maritime cliffs, with historic landmarks such as St Mary's lighthouse and Tynemouth Priory. • Heavily modified, Tynemouth estuary supports regionally important numbers of wintering waterbirds and breeding shelduck and North Shields is a busy port terminus for sea ferries to Norway and Denmark. • Part of North Tyneside coast supports seabirds: purple sandpiper, ruddy turnstone and breeding little tern. • Long history of settlement, mining and industry evidenced through historic buildings and settlement patterns which form a core part of today's landscape.	• Reverse the fragmentation of semi-natural habitats due to the industrial and urban expansion of Tyneside by extending, creating and linking habitats in rural areas, developing or regenerating urban green spaces/urban fringe and protecting brownfield sites with high biodiversity interest. • Enhance and manage the Tyne and Wear river network and Tyneside coastal area to improve water quality and reduce flood risk, and to mitigate the effects of climate change. • Use an understanding of the unique historic landscape and heritage features of the Tyne and Wear Lowlands NCA to provide opportunities for interpretation, education, wellbeing, recreation and tourism, and to inform good design in new development that respects the setting of heritage assets.

6.10 Cultural Heritage

Scheduled Ancient Monuments

6.10.1 A Scheduled Ancient Monument (SAM) is a nationally important archaeological site or historic building given protection under the Ancient Monuments and Archaeological Areas Act 1979. A monument which has been scheduled is protected against disturbance and the Secretary of State must be informed about any work which might affect a monument above or below ground. Two SAMs are present within the study area and details are provided in Table 6.15 below. ***Plan 03*** in ***Appendix B*** shows their location.

Table 6.15: Scheduled Ancient Monuments within the study area

Name	Description (adapted from list entry, EH)	Management Areas
Tynemouth Iron Age and Romano-British settlements, monasteries, site of lighthouse, cross, motte, enclosure and artillery castles and later coastal defences (No. 1015519)	This monument includes the remains of an Iron Age and Romano-British settlement, a pre-conquest and a post-conquest monastery, a ninth century wayside cross, a possible Norman motte, an enclosure castle, an artillery castle and 19th and 20th century coastal defences. They occupy a prominent headland with steep cliffs on three sides and form an important strategic position where, from the earliest times, it could command the mouth of the River Tyne.	MA26, MA27
Clifford's Fort (No. 1005896)	Clifford's Fort was built in 1672 at the beginning of the third Dutch war, to protect the mouth of the River Tyne and prevent enemy warships from entering the river. The Fort was intended to resist attack from the sea; therefore its firepower was concentrated in a riverside gun battery with a series of gun embrasures. The Fort was re-modelled in the 18th and 19th centuries and manned and maintained as a shore-based battery until 1881 when it was declared obsolete. In recent times Clifford's Fort has been at the heart of a comprehensive local authority re-generation scheme for the Fish Quay. The removal of inappropriate structures associated with the fishing industry and the repair and consolidation of the Fort and associated buildings as part of this scheme has helped to transform the Fort and this part of North Shields.	MA27

Listed Buildings

6.10.2 When buildings are listed they are placed on statutory lists of buildings of 'special archaeological or historic interest' under the Planning (Listed Buildings and Conservation Areas) Act 1990. Listing identifies only those buildings that are of national special interest. It is not intended to be a preservation order, simply a mark that celebrates a building's special architectural and historic interest and ensures its future is considered within the planning system. The following grades apply to listings:

- **Grade I** buildings are of exceptional interest, sometimes considered to be internationally important. Just 2.5% of listed buildings are Grade I.
- **Grade II*** buildings are particularly important buildings of more than special interest. 5.5% of listed buildings are Grade II*
- **Grade II** buildings are nationally important and of special interest. 92% of all listed buildings are in this class and it is the most likely grade of listing for a home owner.

6.10.3 Listed buildings falling within the study area are detailed in x below. Their location is shown on ***Plan 03*** in ***Appendix B***.

Table 6.16: Listed Buildings within the study area

Name	Grade	Grid Reference (X,Y)	Management Areas
St Georges Parish Church	I	436442, 570835	MA26
Collingwood Monument and Guns	II*	437180, 569066	MA27
Clifford's Fort South And East Wall Facing River	II*	436337, 568493	MA27
Cliffe House, Bank Top	II*	436418, 571467	MA26
Cliffords Fort West And South West Wall	II*	436326, 568533	MA27
War Memorial at St Georges Parish Church	II	436468, 570834	MA26
Lighthouse, Low Lights	II	436270, 568435	MA27
Former Life Brigade House	II	436310, 571288	MA26
Ballards Smoke House	II	436355, 568573	MA27
Former Radio Telegraph Station	II	436537, 571621	MA25/ MA26
War Memorial, The Links	II	435403, 572800	MA25
Clock Tower, Front Street	II	437106, 569409	MA26 / MA27
Former Irvin Buildings,Union Quay,North Shields,Tyne And Wear	II	436243, 568565	MA27
Sewer Gas Lamp, The Links	II	435316, 572767	MA25
Statue Of Duke Of Northumberland, Tynemouth Road	II	436466, 569063	MA27
North Pier And Lighthouse	II	437846, 569178	MA26/ MA27
Sewer Gas Lamp, Watts Road	II	435482, 572758	MA25
Liddell Tomb, Tynemouth Priory	II	437341, 569375	MA26 / MA27
Wright Tomb, Tynemouth Priory	II	437359, 569376	MA26 / MA27
Haswell Tomb, Tynemouth Priory	II	437366, 569374	MA26 / MA27
Anderson Tomb, Tynemouth Priory	II	437359, 569362	MA26 / MA27
Clark Family Tombs, Tynemouth Priory	II	437362, 569377	MA26 / MA27

Name	Grade	Grid Reference (X,Y)	Management Areas
Tomb In Style Of Greek Temple, Tynemouth Priory	II	437358, 569365	MA26 / MA27
The Dome, Spanish City	II	435412, 572693	MA25
Adamson Memorial Fountain	II	436364, 571218	MA26
Drinking Fountain, Northern Promenade	II	435230, 573243	MA25
Royal Nat Lifeboat Inst Lifeboat House	II	436397, 571367	MA26
The Watchtower, Percy Gardens	II	437033, 569880	MA26
Brigade Cottage, Spanish Battery	II	437233, 569034	MA27
Watch House, Spanish Battery	II	437255, 569047	MA27
Beacon House, Trinity Buildings	II	436116, 568451	MA27
Watch House, Bank Top	II	436401, 571400	MA26
Ex Station Passenger Building, Mariners Point	II	436764, 569175	MA27
Low Lights Tavern, Brewhouse Bank	II	436258, 568605	MA27
St Marys Lighthouse	II	435247, 575389	MA24 / MA25
45 Front Street, Tynemouth	II	437119, 569359	MA26 / MA27
46 Front Street, Tynemouth	II	437101, 569361	MA26 / MA27
54 Fish Quay, North Shields	II	436309, 568484	MA27
The Cottage, St Marys Island	II	435229, 575398	MA24 / MA25
22 Lovaine Row, Tynemouth	II	436989, 569507	MA26
The Old Maltings, Tanners Bank	II	436314, 568779	MA27
47 Front Street, Tynemouth	II	437088, 569373	MA26 / MA27
High Lighthouse, Dockwray Square	II	436053, 568377	MA27
Grand Hotel, Percy Gardens	II	436958, 569887	MA26
Master Mariners, Tynemouth Road	II	436463, 569070	MA27
St Georges Vicarage	II	436388, 570821	MA26

Local Register

6.10.4 Locally listed buildings are a material consideration to be taken into account during the planning decision-making process. National Planning Policy Framework, paragraph 135, informs that '*the*

effect of an application on the significance of a non-designated heritage asset should be taken into account...' and that '*a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset*.'

6.10.5 North Tyneside Council have compiled a list of significant buildings and parks that are not nationally listed but are considered to be of local architectural and historic interest. The Local Register was compiled from a list of public nominations in 2005 and later finalised by a panel of local history, architecture and conservation experts. The register offers a level of protection against undesirable alteration and aims to give recognition to the sites as well as preserve or enhance their local architectural and historic interest.

6.10.6 In 2008 NTC adopted the Local Register as a Supplementary Planning Document (SPD). The SPD identified where planning permission is submitted for the demolition of a building on the register, authorities must take account of the building's local interest in determining the application. A proposal to demolish a Locally Registered building in a conservation area would therefore be assessed against the same criteria as a proposal to demolish a Statutory Listed building.

6.10.7 Buildings and parks on the Local Register which fall within the study area are listed in Table 6.17 below. Their location is shown on ***Plan 03*** in ***Appendix B***.

Table 6.17: Buildings and parks on the Local Register within the study area

Name	Grade	Grid Reference (X,Y)	Management Areas
1 Union Quay, North Shields	Local	436132, 568400	MA27
Dove Marine Laboratory, Cullercoats Bay	Local	436365, 571304	MA26
Caley Fisheries Ships Chandlers, Tanners Bank	Local	436349, 568686	MA27
Tynemouth Sailing Club Storage Hut	Local	437294, 569168	MA27
Tynemouth Open Air Pool, Longsands	Local	437072, 569962	MA26
Rendezvous Cafe, Dukes Walk	Local	435177, 573355	MA25
Rex Hotel, Whitley Bay	Local	435777, 572352	MA25
Search Light, Priors Haven	Local	437335, 569302	MA26 / MA27
Tynemouth Park, Grand Parade	Local	436573, 570199	MA26
Panama Gardens, The Links	Local	435232, 572998	MA25
Whitley Park, Park Avenue	Local	435424, 572508	MA25
Queens Head, Front Street	Local	436394, 571499	MA25 / MA26
Lion's Head Fountain, Longsands	Local	436816, 570018	MA26

Name	Grade	Grid Reference (X,Y)	Management Areas
Grant's Clock, Whitley Bay	Local	435768, 572404	MA25
Royal National Mission To Deep Sea Fishermen, 52 Bell Street	Local	436114, 568378	MA27
42 Beverley Terrace, Cullercoats	Local	436350, 571157	MA26
Knott Memorial Flats, North Shields	Local	436587, 569016	MA27
Former Quay Master's Office And House,40 - 41 Fish Quay	Local	436285, 568487	MA27
2-6 Trinity Buildings, North Shields	Local	436130, 568465	MA27
Pier Cottage, Pier Road	Local	437192, 569243	MA27
1-47 Percy Gardens Plus The Lodge, Priory Court And Gardens	Local	437047, 569723	MA26
1-6 Old Coastguard Cottages, Spanish Battery	Local	437251, 569085	MA27
1 Warkworth Terrace, Tynemouth	Local	436861, 569861	MA26
22, 24, 26, 28 Lovaine Row, Tynemouth	Local	436986, 569507	MA26
1-4 Spanish Battery, Tynemouth	Local	437248, 569122	MA27
3 Northumberland Terrace, Tynemouth	Local	436891, 569138	MA27
10 Priors Terrace, Tynemouth	Local	436966, 569120	MA27

Conservation Areas

6.10.8 Conservation Areas are areas of special architectural or historic interest, the character or appearance of which is desirable to preserve or enhance. NPPF paragraph 137 states '*local planning authorities should look for opportunities for development within Conservation Areas and... within the setting of heritage assets to enhance or better reveal their significance*.'

6.10.9 The Local Planning Authority have designated several Conservation Areas within the study area. Table 6.18 below provides a description and ***Plan 03*** in ***Appendix B*** shows their location.

Table 6.18: Conservation Areas within the study area

Name	Description	Management Areas
St Mary's Island Conservation Area	Designated in 1974 St Mary's Island is one of the most painted and photographed landmarks in the country and is also one of North Tyneside's most popular tourist attractions. The conservation area incorporates not only the island, but also the surrounding rocky landscape and mainland area around it. A revised character appraisal for the conservation area was adopted in April 2010.	MA24 / MA25
Fish Quay Conservation Area	The Fish Quay is a rugged, hardworking area with commercial activity in the setting of a number of historic structures. Its unique mix of buildings reflects the area's history and gives it a very special character. The conservation area was adopted in 2003.	MA27
Cullercoats Conservation Area	Cullercoats saw its first growth in the late 1600s when it flourished in the export trades of oats, wool, salt and coal. Later the area would be known for fishing and then also as a fashionable bathing dormintory town, which grew further following the arrival of the railway in 1882. Now the area is rich with reminders of its colourful past, with its maritime buildings in and around the bay, its grand Victorian terraces and several other important buildings and features, which together form a special place with a great sense of history. The conservation area was designated in March 2008 and a character appraisal was adopted in July 2009.	MA25 / MA26
Tynemouth Village Conservation Area	Tynemouth is a medieval village that grew in the early 19th Century as a fashionable dormitory for the middle classes of industrial Tyneside, and further again with the arrival of the railway and the opening of the Tynemouth Terminus in 1847.Key features of the conservation area are the 11th Century Priory and the Elizabethan Castle. The conservation area was designated in 1971, with some boundary amendments made in 2009. A community-led Character Statement was adopted in July 2003 and a Character Appraisal, produced by the Council, was adopted in April	MA26 / MA27

Name	Description	Management Areas
	2010. There are two Article 4(2) Directions protecting certain buildings in the conservation area. The Tynemouth Village Conservation Area Management Strategy SPD was adopted in April 2014.	

Sites of Archaeological Interest

6.10.10 The Tyne and Wear local authority-based archive of information relating to the historic environment, (the Historic Environment Record (HER)) records information regarding known archaeological sites in the borough. As well as recording Scheduled Monuments and Listed buildings, it also records locally important archaeology.

6.10.11 The HER within the study area includes entries from the medieval, post-medieval and modern periods (18th, 19th and 20th centuries). Many of the modern period entries relate to the areas military heritage and have been recorded by the Defence of Britain project. These include pillboxes, anti aircraft batteries, tank traps, a radar station and searchlight battery. There are also several entries for ship wreck sites along the coast.

6.10.12 It should be noted that the study area has potential for unidentified archaeology, some of which could be of national significance.

Figure 6.8 Tynemouth Priory and Castle SAM

Figure 6.9 Tynemouth Pool, Local Register

6.11 Geology, Soils and Material Assets

Geology

6.11.1 The stretch of coastline comprising the study area is of outstanding geological interest and diversity and contains one of the best exposures of Coal Measure strata in Great Britain.

6.11.2 There are superficial deposits of brown sand and gravel as well as clay silt and sand alluvium along the 10km stretch of the study area.

6.11.3 The study area is dominated by cliffs and rocky outcrops interspersed with low lying sand beaches. Sand dune and sand flat landforms are also present in a number of the coastal sections.

Soils

6.11.4 The majority of the soil in the study area is slowly permeable, seasonally wet soil. The texture of soil is loamy and clayey with moderate fertility. Soils are seasonally wet with impeded drainage. To the north of the study area from Whitley Bay to Seaton Sluice soils are similar in structure but with higher acidity leading to lower fertility.

Material Assets

6.11.5 Tynemouth to Seaton Sluice SSSI is designated for its rocks belonging to the Upper Carboniferous Coal Measures. It includes outcrops of coal seams and mudstone horizons. The exposures along this stretch of coastline are some of the most frequently visited in the British Isles.

6.11.6 Geology of the area is ideally suited to providing the depth and temperatures required to support geothermal resources in the North Tyneside region.

6.11.7 All of the North Tyneside area has a strong history of mineral extraction, notably for the coal industry however there are no remaining working sites.

6.12 Climatic Factors

6.12.1 The closest Meteorological Office weather station to the study area is located in Boulmer, approximately 40 miles north, situated on the Northumberland coast. Annual averages for this station are available between 1981 and 2010 and are summarised in Table 6.19 below.

Table 6.19: Annual climate averages 1981 to 2010

Max Temp (°C)	Min Temp (°C)	Rainfall (mm)
12.2	5.9	689.1

6.12.2 UK Climate Projections (UKCP09) estimate sea levels to rise in the region of 21.8cm for London and 13.9cm for Edinburgh by 2050 (under a medium emissions scenario). The rise in sea levels will add to the pressure on existing coastal defences, with higher intensity storm surges anticipated along the coastline. In addition, wetter winters and drier summers, as well as higher annual mean winter and summer temperatures are expected. Winter mean precipitation is projected to increase in the region of 11% by 2050, with urban drainage systems becoming increasingly surcharged and properties at a greater risk of flooding.

7. Key Environmental Issues and Opportunities

7.1 Summary of Key Issues

7.1.1 Following a comprehensive review of the environmental baseline a number of key issues and opportunities have been highlighted. These issues form the basis for identifying the objectives against which the potential management options will be assessed. Where only a small amount of issues have been identified for a topic, professional judgement has been applied to scope this topic out of the next stages of the SEA. Table 7.1 presents which topics have been scoped in or out of the SEA, along with a summary of the key issues and opportunities for each receptor.

Table 7.1: Key Issues and opportunities for consideration in the SEA

Receptor	Scoped		Key Issues and Opportunities
	In	Out	
Population, Human Health and Recreation	✓		• There is currently a risk of flooding and coastal erosion to people and property within the study area; safeguarding human health and safety is of high importance. • Recreational resources along the coast are important for ensuring the health and wellbeing of the population; opportunities for walking, cycling, surfing, diving, rowing, canoeing, sea angling and sailing must be preserved or enhanced where appropriate. • A network of Public Rights of Way, footpaths, cycle ways, bridleways and nationally promoted routes provide important links to sites used for recreation along the coast; these links should be preserved or enhanced where appropriate.
Local Economy	✓		• The populated areas of Whitley Bay, Cullercoats and Tynemouth are economically important areas for independent business; safeguarding commercial assets is of high importance. • The coast and its attractions are an important element of the borough's economy; safeguarding commercial assets associated with the tourism industry is of high importance. • A number of temporary events hosted along the coast provide an important boost to the local economy; the ability to host these events should not be compromised. • The fishing industry is an important part of the local economy; the industry should be supported alongside the programme for regeneration. • The Port of Tyne provides a significant contribution to the regional economy; these activities should be preserved or enhanced where appropriate.
Transport	✓		• Parts of the road network, which provide an important link to the coast and its attractions from surrounding conurbations, are at risk from flooding and/or erosion; safeguarding the road network is of high importance. • The Port of Tyne is a key part of the transport infrastructure; opportunities for growth of this infrastructure should not be compromised and enhanced where appropriate.
Biodiversity, Flora and Fauna	✓		• There are a number of statutory and non statutory sites designated for their nature conservation value within the study area; many are located within the inter-tidal zone and should be protected or enhanced. • There is potential for the loss of intertidal habitat associated with sea level rise and 'coastal squeeze'; areas of rocky foreshore should be protected or enhanced to ensure no net loss of the habitat. • The study area supports diverse habitats of flora and fauna which are recognised through national and local Biodiversity Action Plans; these habitats should be protected or enhanced.
Water	✓		• Coastal water quality currently meets the higher standards under the Bathing Water Directive; minimising pollution and maintaining coastal water quality (or improving it where possible) is important.

Receptor	Scoped		Key Issues and Opportunities
	In	Out	
			• Surface water courses within the study area currently have poor to moderate ecological water quality status; minimising pollution and maintaining surface water quality (or improving it where possible) is important.
Air, Noise and Light		✓	• Air quality meets all current annual objectives; minimising pollution and maintaining air quality standards is important. • There are currently no major issues with regard to noise and vibration within the study area; ensuring levels remain acceptable is important. • Light pollution should be avoided or where possible reduced, to enable an appreciation of the dark sky. *Air, noise and light are scoped out of the SEA on the basis that likely impacts are associated with individual projects, particularly in relation to proposed construction activities. As such these topics will be dealt with at project level EIAs*
Land Use	✓		• The coastal strip is generally maintained in an open state; maintaining or enhancing the open character is important for tourism and recreation. • Growth and development along the coast should integrate with the protection and enhancement of the natural and historic environment. • The coast is undergoing a programme of regeneration and development; an appreciation of future projects and land uses is important. • Land uses related to the Port of Tyne and fishing industries should be supported in appropriate areas along the coast.
Landscape/ Seascape and Visual Amenity	✓		• The coastal landscape and seascape is defined by a unique combination of landscape, biodiversity, geodiversity and cultural and economic activity; this character should be maintained or enhanced.
Cultural Heritage	✓		• There are several nationally important archaeological sites and historic buildings within the study area; these sites and their setting should be protected and where possible enhanced in a manner commensurate with their significance. • There are numerous locally important archaeological sites and historic buildings within the study area; these sites and their setting should be protected and where possible enhanced in a manner commensurate with their significance. • There are several conservation areas along the coast; it is desirable to consider development opportunities that enhance or better reveal their character or appearance. • There is potential for unidentified (un-designated) archaeology within the study area; it should be appreciated that these sites may be of national significance.
Geology, Soils and Material Assets	✓		• Parts of the coastline are of national geological interest and this is recognised through its designation as a SSSI; preserving these sites is important.
Climatic Factors	✓		• Climate change projections in relation to sea level rise and the frequency of more extreme weather events, suggest an increased risk to people and property. Vulnerability to effects of climate change should be reduced.

8. SEA Framework

8.1 SEA Objectives, Indicators and Assessment Criteria

8.1.1 The SEA framework forms the basis for identifying, measuring and comparing potential environmental effects associated with the different coastal flood and erosion management options developed for the study area. The assessment criterion helps to guide the assessment and provides a focus for the most important environmental issues (as identified in ***Section*** 7).

8.1.2 A number of SEA objectives have been derived through; an understanding of the environmental baseline, a review of related plans and programmes, and consultation activities undertaken with stakeholders and the public. Guide questions sit alongside these objectives to provide a direction to the assessment and to help facilitate discussion as regards to the potential impacts and effects of each proposed option.

8.1.3 Possible indicators and targets are also provided in the framework and will be used by NTC for monitoring and measuring the achievements of the Coastal Strategy following its implementation:

- **Indicators** are used to provide a measure of whether the objective has been achieved or not. Where possible indicators use quantitative environmental information.
- **Targets** set a desired outcome and where possible the target is quantifiable.

8.1.4 The framework has been used throughout options development. Initial high level assessments on the long list of options were conducted alongside other technical, social and economic appraisals to discount the most unacceptable alternatives and establish a shortlist to take forward. Shortlisted options were then subject to a more detailed assessment. This process was often iterative with the alternatives being revised where possible, to reduce any negative effects.

Table 8.1: SEA framework

	SEA Objectives		Guide Questions for Option	Possible Indicators	Possible Targets
Population, Human Health and Recreation	1	**Ensure people and property are protected against coastal erosion and flooding risk.**	• Does it have the potential to cause or exacerbate flooding risk to people and property? • Does it have the potential to help alleviate flooding risk to people and property? • Does it have the potential to affect coastal processes and/or erosion rates, putting people and property at a higher risk? • Does it minimise the risks of coastal change/erosion to people and property?	• Number of properties at risk from flooding. • Number of properties at risk from coastal erosion. • Number of defences maintained in a 'good' condition.	• No loss to human life or deterioration of human health as a result of flooding and coastal erosion.
	2	**Promote good health and well being through the provision of, and access to, coastal recreational resources.**	• Does it protect and/or enhance the health, safety and well being of the population through provision of access to recreational resources? • Will it change the location, extent or access to PRoW, cycleways, sailing and rowing clubs, the beach or other recreational resources?	• Area measurement of green infrastructure provision along the coast. • Length of PRoW and cycle ways within the study area. • Number of people with 'good health' in the coastal wards. • Number of beaches awarded Blue Flag and Quality Award Status. • Number of cyclist trips on coastal routes.	• No reduction in the area of green infrastructure provision. • No reduction in the length of PRoW and cycleways. • No reduction in the number of people classified as having 'good health' from 2011 baseline. • Achieve Blue Flag status on all beaches. • Achieve Quality Award status on all beaches. • No reduction in the number of cyclist trips on coastal routes.

	SEA Objectives		Guide Questions for Option	Possible Indicators	Possible Targets
Local Economy	3	**Support the local economy through protection of assets related to the tourism industry.**	• Does it have the potential to cause or exacerbate flooding risk to assets associated with the tourism industry? • Does it have the potential to help alleviate flooding risk to assets associated with the tourism industry? • Does it have the potential to affect coastal processes and/or erosion rates putting assets associated with the tourism industry at a greater risk? • Will it minimise the risks of coastal change/erosion and flooding to assets related to tourism? • Does it compromise the ability to host any of the high profile temporary events which take place along the coast?	• Number of assets related to the tourism industry at risk from flooding. • Number of assets related to the tourism industry at risk from coastal change/erosion. • Revenue from assets related to the tourism industry. • Number of people employed in the tourism industry. • Revenue from high profile temporary events.	• No increase in the number of assets related to the tourism industry at risk from flooding. • No increase in the number of assets related to the tourism industry at risk from coastal change/erosion. • No loss of revenue for commercial assets related to the tourism industry as a result of flooding and/or coastal erosion. • No reduction in the number of people employed by the tourism industry due to flooding and/or coastal erosion. • No loss of areas used to host high profile temporary events on the coast.
	4	**Recognise and support the role of the fishing and port based industries when considering coastal defence options.**	• Does it have a negative impact on fishing and/or port based commercial assets? • Does it minimise the risks of coastal change/erosion to commercial assets related to the fishing and/or port based industries? • Does it minimise the risks of flooding to commercial assets related to the fishing and/or port based industries?	• Number of people employed in the fishing and port based industries. • Number of commercial assets at risk from flooding. • Number of commercial assets at risk coastal erosion.	• No increase in the number of assets related to the fishing and/or port based industries at risk from flooding. • No increase in the number of assets related to the fishing and/or port based industries at risk from coastal change/erosion • No loss of revenue from commercial assets related to the fishing and/or port based industries as a result of flooding and/or coastal erosion.

	SEA Objectives		Guide Questions for Option	Possible Indicators	Possible Targets
Transport	**5**	**Ensure that the transport infrastructure is protected from coastal change and flooding risk.**	• Does it have the potential to cause or exacerbate flooding risk to the transport infrastructure? • Does it have the potential to help alleviate flooding risk the transport infrastructure? • Does it have the potential to affect coastal processes and/or erosion rates, putting the transport infrastructure at a higher risk? • Does it minimise the risks of coastal change/erosion to the transport infrastructure?	• Length of the transport infrastructure at risk from flooding. • Length of the transport infrastructure at risk from coastal change/erosion.	• No increase in the length of the transport infrastructure at risk from flooding. • No increase in the in the length of the transport infrastructure at risk from coastal change/erosion.
Biodiversity, Flora and Fauna	**6**	**Protect and seek to enhance sites designated for their nature conservation value.**	• Does it protect and/or enhance internationally designated nature conservation sites e.g. SPAs and Ramsars? • Does it protect and/or enhance nationally designated nature conservation sites e.g. SSSIs? • Does it involve the loss, damage or fragmentation of statutory or non-statutory habitats? • Does it cause a reduction to the favourable condition of sites?	• Area measurement of internationally designated sites within the study area. • Area measurement of nationally designated sites within the study area. • Number of of SSSI units with a 'favourable' condition.	• No reduction in the reported extent of internationally designated sites. • No reduction in the reported extent of nationally designated sites. • No reduction in the number of SSSI units maintained in a favourable condition.
	7	**Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management, including priority habitats indicated in BAPs.**	• Does it have the potential to improve the favourable condition of priority habitats? • Does it contribute to achieving any of the targets set for habitats in the UKBAP/LBAP?	• Number of UKBAP/LBAP habitats in favourable condition. • Number of targets in the UKBAP/LBAP achieved.	• Have a positive contribution to targets identified in the UKBAP/LBAP. • No reduction of the number of habitats in favourable condition.
Water	**8**	**Minimise pollution to coastal and surface waters and ensure targets established by the Water Bathing Directive and Water Framework Directive are not compromised.**	• Does it have the potential to increase the amount of pollution arising from wastewater and surface runoff? • Does have the potential to reduce the ecological status/ecological potential of surface, estuarine and coastal waters quality?	• Bathing Waters Directive annual compliance monitoring results. • Water Framework Directive monitoring results. • Blue Flag status of beaches. • Quality Award status of beaches.	• Maintain 'higher' compliance status at all beach monitoring points under BWD. • No reduction to ecological and chemical water quality status as assessed under the WFD. • Achieve Blue Flag status on all beaches. • Achieve Quality Award status on all beaches.

	SEA Objectives		Guide Questions for Option	Possible Indicators	Possible Targets
Land Use	**9**	**Protect and enhance existing and proposed land uses.**	• Does it conflict with or obstruct any proposed development and/or regeneration activities? • Does it increase the risk of significant land contamination? • Does it conflict with or obstruct activities associated with the fishing industry in areas which are designated through the Local Plan for this purpose? • Does it conflict with or obstruct activities associated with the port based industry in areas which are designated through the Local Plan for this purpose?	• Extent of brown field land identified for regeneration brought back into use. • Extent and standard of protection for areas of contaminated land. • Extent of land identified in the Local Plan as appropriate for the fishing industry, used for this purpose • Extent of land identified in the Local Plan as appropriate for port based industry, used for this purpose	• No release of contaminants that may result in pollution. • No loss of sustainable land use or conflicts with planned sustainable land use. • No loss in the extent of land appropriately used by the fishing industry • No loss in the extent of land appropriately used by port based industries.
Landscape/ Seascape and Visual Amenity	**10**	**Protect and enhance landscapes and seascapes though sympathetic coastal defence management.**	• Does it have a negative visual impact on the landscape (including at night)? • Does it negatively affect the distinctive landscape/seascape quality and character? • Does it enhance the distinctive landscape/seascape quality and character?	• Visual amenity for seafront properties.	• No adverse impacts on existing landscape character and visual amenity. • Enhancement of landscapes and improvement to the existing visual amenity.
Cultural Heritage	**11**	**Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.**	• Does it have the potential to damage the fabric or have a negative impact on the setting of a nationally designated historic asset e.g. SAM and Listed Building? • Does it have the potential to damage or cause the loss of designated archaeological features? • Does it help to conserve the historic asset? • Does it have the potential to reduce public access to nationally important historic assets?	• Condition of designated historic assets. • Properties on the Heritage at Risk Register • Number of visits/admissions to historic assets.	• No loss or damage to designated heritage assets. • No properties within the study area added to the Heritage at Risk Register • Maintain or increase the number of visits/admissions to historic assets.

	SEA Objectives		Guide Questions for Option	Possible Indicators	Possible Targets
	12	**Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.**	• Does it have the potential to damage the fabric or have a negative impact on the setting of locally listed historic building and known archaeological site? • Does it have a negative impact on the ability to investigate unknown buried archaeology?	• Number of new sites added to the HER. • Number of sites on the Local Register	• No loss of non-designated assets of local interest (appearing on the Local Register).
	13	**Maintain and where possible, enhance the distinctiveness and historic character of local settlement.**	• Does it have the potential to alter/damage the character of the conservation area? • Does it have the potential to result in the loss of places or spaces that contribute to local distinctiveness, and historic landscape character?	• Conservation area appraisals. • Conservation areas on the Heritage at Risk Register	• No loss or damage to places or spaces which contribute to the local distinctiveness and historic landscape character. • No conservation areas within the study area on the Heritage at Risk register.
Geology, Soils and Material Assets	14	**Protect and seek to enhance sites designated for their geological interest.**	• Does it protect and/or enhance national Geological Conservation sites and important geological features e.g SSSIs? • Does it involve the loss or damage to statutory or non-statutory geological sites? • Does it cause a reduction to the favourable condition of sites?	• Area measurement of nationally designated sites within the study area. • Number of of SSSI units with a 'favourable' condition.	• No reduction in the reported extent of nationally designated sites. • No reduction in the number of SSSI units maintained in a favourable condition.

9. Strategic Environmental Assessment

The SEA Directive requires:

The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors... (Annex 1 (f))

and

...the likely evolution [of the environment] *without implementation of the plan or programme... (Annex 1 (b))*

9.1 Introduction

9.1.1 This section of the Environmental Report considers the potential environmental impacts of implementing the Coastal Strategy and its proposed shortlist of coastal management options.

9.1.2 Objectives of the Plan are firstly assessed against objectives derived for the SEA, identifying synergies and inconsistencies in the overall aim and direction of the Strategy. Where conflicts have been found to arise between objectives and consistency cannot be achieved, a decision has been made as to where the priority lies and the justification for this decision recorded.

9.1.3 Proposed shortlisted coastal management options within each Policy Unit (PU) are then assessed identifying potential environmental impacts, their effects and a measure of significance for these effects. In conducting this assessment reference has been made to the SEA Framework (see ***Section*** 8) and topic specific significance descriptions (see ***Annex E***). ***Table 9.1*** below shows the scale used to describe the significance of effects against each SEA objective.

Table 9.1 Scale of significance and descriptors used in the assessment of alternatives

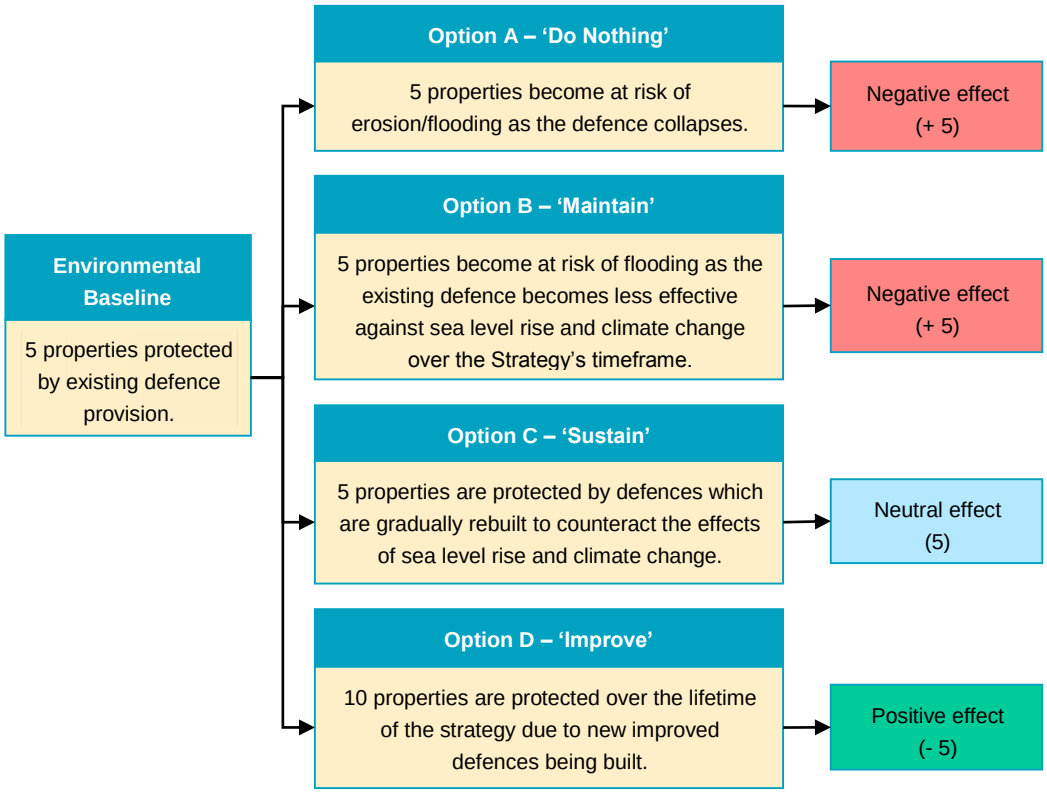
Scale	Key
Significant positive	++
Minor positive	+
Neutral or no effect	o
Minor negative	-
Significant negative	- -
Uncertain or multiple effects +/-	?

Descriptor	Key
Permanent	P
Temporary	T
Long term (>25 years)	***Lt***
Medium term (5 to 25 years)	***Mt***
Short term (0 to 5 years)	***St***
Direct	D
Indirect	I
Synergistic	Sy

9.1.4 The scale of effect (i.e. positive, neutral or negative) is measured as the **change from the environmental baseline** (i.e. the change from current environmental characteristics). For example where a policy option maintains protection to the same number of people and properties over the Strategy's timeframe that are currently afforded protection, a 'neutral' assessment of significance will be made. Where there is an increase in the number of people and properties protected a positive assessment will be made and conversely, where there is a decrease, a negative assessment will be made.

9.1.5 ***Figure 9.1*** below provides an example of the different assessment scenarios that may result from a range of policy alternatives with regard to the number of people and properties at risk from coastal erosion and flooding.

Figure 9.1: Example of Assessment Scenarios



9.1.6 For each PU a 'do nothing' option has been retained on the shortlist for assessment. This option establishes the likely evolution of the coast should no strategy for coastal management be implemented and provides a comparison for effects between alternatives.

9.1.7 In interpreting the results of the assessment a number of limitations should be taken into account. These limitations are listed in ***Section 9.6*** below.

9.2 Testing compatibility of the Coastal Strategy objectives and the SEA objectives (Task B1)

9.2.1 The objectives of the Coastal Strategy are outlined in ***Table 9.2*** below.

Table 9.2: Coastal Strategy objectives

Ref	Objective
1	To protect homes and property from flooding and/or erosion risk.
2	To prevent loss, damage and disruption to infrastructure.
3	To maintain access to the coast for tourism and leisure, including access points, car parking, promenades and cycle networks.
4	To protect commercial assets and use of the coast.
5	To maintain or improve the quality of environmentally designated sites, including promoting biodiversity and maintaining conservation value.
6	To maintain the conservation value of, and access to, historic assets on the coast.

9.2.2 The objectives of the SEA are outlined in ***Table 9.3*** below.

Table 9.3: SEA objectives

Ref	Objective
1	Ensure people and property are protected against coastal erosion and flooding risk.
2	Promote good health and well being through the provision of, and access to, coastal recreational resources.
3	Support the local economy through protection of assets related to the tourism industry.
4	Recognise and support the role of the fishing and port based industries when considering coastal defence options.
5	Ensure that the transport infrastructure is protected from coastal change and flooding risk.
6	Protect and seek to enhance sites designated for their nature conservation value.
7	Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management, including priority habitats indicated in BAPs.
8	Minimise pollution to coastal and surface waters and ensure targets established by the Water Bathing Directive and Water Framework Directive are not compromised.
9	Protect and enhance existing and proposed land uses.
10	Protect and enhance landscapes and seascapes though sympathetic coastal defence management.

Ref	Objective
11	Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.
12	Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.
13	Maintain and where possible, enhance the distinctiveness and historic character of local settlement.
14	Protect and seek to enhance sites designated for their geological interest.

9.2.3 Results of the compatibility assessment between the SEA objectives and those developed for the Coastal Strategy are presented in ***Figure 9.2*** below. The matrix demonstrates the potential synergies, conflicts and uncertainties between objectives.

Figure 9.2: Objectives Compatibility Matrix

SEA Objectives															
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
+	+	+	+	+	-	+	+	+	-	+	+	+	o	1	CS Objectives
+	+	+	+	+	-	+	+	+	-	+	+	+	o	2	
+	+	+	+	+	-	+	+	+	+	+	+	+	+	3	
+	+	+	+	+	-	+	+	+	+	+	+	+	+	4	
-	-	+	-	-	+	+	+	+	+	+	+	+	+	5	
+	+	+	o	+	-	+	+	+	+	+	+	+	+	6	

+	Objectives are compatible	o	Objectives are not related
-	Objectives are potentially incompatible	/	Uncertainty over relationship

Potentially Incompatible Objectives

'CS Objective 1 v SEA Objective 6' and 'CS Objective 5 v SEA Objective 1'
(CS 1) To protect homes and property from flooding and/or erosion risk. *v* *(SEA 6) Protect and seek to enhance sites designated for their nature conservation value.*
(*CS 5*) *To maintain or improve the quality of environmentally designated sites, including promoting biodiversity and maintaining conservation value.* v (*SEA 1*) *Ensure people and property are protected against coastal erosion and flooding risk.*
Where 'hard defences' (manmade structures) have been built to protect communities from coastal flooding and erosion, the position of the coastline remains fixed. Habitats that would normally move landward in response to erosive forces, such as rocky shore, are then vulnerable to any rise in sea level with the habitat between the defence and the sea being 'squeezed' and lost. The effects of 'coastal squeeze' are particularly significant where the habitat supports internationally or nationally important species such as populations of breeding and migratory birds. The North Tyneside Coastline is predominantly urbanised and there is a requirement to protect the communities from coastal flooding and erosion. Large sections of the coastline however are a designated SPA and therefore a balance must be found between the need to protect coastal communities and internationally important species. Where there is an inconsistency between objectives in the assessment the preference will be towards the protection of homes and property as long as the economic and social case provides a strong justification to do so.

'CS Objective 3 v SEA Objective 6' and 'CS Objective 5 v SEA Objective 2'
(CS 3) To maintain access to the coast for tourism and leisure, including access points, car parking, promenades and cycle networks. *v* *(SEA 6) Protect and seek to enhance sites designated for their nature conservation value.*
(CS 5) To maintain or improve the quality of environmentally designated sites, including promoting biodiversity and maintaining conservation value. *v* *(SEA 2) Promote good health and well being through the provision of, and access to, coastal recreational resources.*
Maintaining access to the coast for tourism and leisure purposes can have significant benefits to community health and culture. However, in areas where the coast has been designated due to the presence of internationally important species, access should be rationalised to reduce disturbance. Where there is an inconsistency between objectives in the assessment the preference will be towards the protection of sites designated for their nature conservation values as coastal access can be managed and directed towards areas with less potential for disturbance.

CS Objective 1 v SEA Objective 10
(CS 1) To protect homes and property from flooding and/or erosion risk. *v* *(SEA 10) Protect and enhance landscapes and seascapes though sympathetic coastal defence management.*
Where possible engineering solutions for the protection of homes and property from flooding and erosion risk, should be sympathetic to the local landscape/seascape character. Mitigation applied at project level (such as the choice of materials) can significantly minimise any adverse effects therefore, where there is an inconsistency between objectives in the assessment the preference will be towards the protection of homes and property.

'CS Objective 2 v SEA Objective 6' and 'CS Objective 5 v SEA Objective 5'
(CS 2) To prevent loss, damage and disruption to infrastructure. *v* *(SEA 6) Protect and seek to enhance sites designated for their nature conservation value.*
(CS 5) To maintain or improve the quality of environmentally designated sites, including promoting biodiversity and maintaining conservation value. *v* *(SEA 5) Ensure that the transport infrastructure is protected from coastal change and flooding risk.*
The use of hard defences to protect infrastructure may result in 'coastal squeeze' over a long period of time. Where there is an inconsistency between objectives in the assessment the preference will be towards the protection of the infrastructure as long as the economic and social case provides a strong justification to do so and the infrastructure cannot be feasibly relocated.

CS Objective 2 v SEA Objective 10
(CS 2) To prevent loss, damage and disruption to infrastructure. *v* *(SEA 10) Protect and enhance landscapes and seascapes though sympathetic coastal defence management.*
Where possible engineering solutions for the protection of infrastructure should be sympathetic to the local landscape/seascape character. Mitigation applied at project level (such as the choice of materials) can significantly minimise any adverse effects therefore, where there is an inconsistency between objectives in the assessment the preference will be towards the protection of infrastructure.

CS Objective 4 v SEA Objective 6
(CS 4) To protect commercial assets and use of the coast. *v* *(SEA 6) Protect and seek to enhance sites designated for their nature conservation value.*
(CS 5) To maintain or improve the quality of environmentally designated sites, including promoting biodiversity and maintaining conservation value. *v* *(SEA 4) Recognise and support the role of the fishing and port based industries when considering coastal defence options.*
The use of hard defences to protect commercial assets may result in 'coastal squeeze' over a long period of time. Where there is an inconsistency between objectives in the assessment the preference will be towards the protection of the commercial assets as long as the economic and social case provides a strong justification to do so and the commercial asset cannot be feasibly relocated.

CS Objective 6 v SEA Objective 6
(CS 6) To maintain the conservation value of, and access to, historic assets on the coast. *v* *(SEA 6) Protect and seek to enhance sites designated for their nature conservation value.*
The use of hard defences to protect historical assets may result in 'coastal squeeze' over a long period of time. Where there is an inconsistency between objectives in the assessment the preference will be towards the protection of the historical assets as long as the economic and social case provides a strong justification to do so and the historical asset cannot be feasibly relocated.

9.3 Assessment of the Strategic Alternatives (Tasks B2 to B4)

Policy Unit 1: Hartley Cove to Curry's Point (SMP PU24.2)

9.3.1 This PU consists of undefended cliffs with a rock shore platform. The only structure is a set of steps at Hartley Cove which provide access to the beach and a view of the exposed coal measures (Tynemouth to Seaton Sluice SSSI). Within this PU there are no properties deemed to be at risk of erosion within the Strategy's timeframe. Erosion rates are low and mainly occur due to slumping of the softer cliff material. Options shortlisted for this policy unit are described in Table 9.4 below:

Table 9.4 Options shortlisted for PU 1

Short Listed Options	Description
0. Do Nothing	No new defences would be constructed and the cliffs would erode naturally. The access steps would be maintained by North Tyneside Council to retain their use as emergency access to the foreshore until the cliffs have eroded to an extent where they are no longer viable.
1. Do Minimum	The access steps would be maintained until the cliffs have eroded to an extent where they are no longer viable. At that time they would be reconstructed at a new position.

9.3.2 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.5 Summary of effects for PU 1

		O-0	O-1	Comments
SEA Objectives	1	O	O	***The preferred option taken forward is O-0 Do Nothing***
	2	- -	- -	Significant **negative** impacts of this option would be: • Loss of a section of PRoW and National Cycleway and eventual loss of access to the beach once steps are unviable; • Loss of several known non-designated archaeological sites through coastal erosion; and, • Permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI. Significant **positive** impacts of this options would be: • Natural retreat of the coastline inland resulting in the creation of new rocky shore habitat. This will benefit European protected species in the Northumbrian Coast SPA.
	3	O	O	
	4	O	O	
	5	O	O	
	6	+ +	+	
	7	-	-	
	8	O	O	
	9	O	O	
	10	-	O	
	11	-	O	
	12	- -	- -	
	13	O	O	
	14	- -	- -	

Policy Unit 2: Curry's Point to Trinity Road car park (including St Mary's Island) (SMP 25.1)

9.3.3 Assets at risk within this PU include properties on St Mary's Island and the car park located on Trinity Road. Defences exist on the landward end of the causeway to St Mary's Island, around the island and southwards from the causeway to the end of Trinity Road car park. Options shortlisted for this Policy Unit are described in Table 9.6 below:

Table 9.6 Options shortlisted for PU 2

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Do Minimum	Existing defences would be maintained until the end of their serviceable life. No new defences would be constructed.
2. Maintain	Existing defences would be maintained and then replaced once they reached the end of their serviceable life.
~~**4. Managed Realignment**~~	Maintain defences on St. Mary's Island but allow erosion to occur on the mainland and progressively move the access ramp inland, ,extending the causeway as erosion occurs. *Not retained for the shortlist.*

9.3.4 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.7 Summary of effects for PU 2

		O-0	O-1	O-2	Comments
SEA Objectives	1	-	-	-	***The preferred option taken forward is O-1 Do Minimum***
	2	- -	-	-	
	3	-	-	-	Significant **negative** impacts of this option would be:
	4	O	O	O	• Natural retreat of the coastline inland will be prevented by the maintenance of the existing defences. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species in the Northumbrian Coast SPA.
	5	- -	-	-	
	6	+ +	- -	- -	
	7	-	O	O	
	8	O	O	O	
	9	O	O	O	
	10	-	-	O	There are no significant **positive** impacts associated with this option.
	11	- -	-	-	
	12	- -	-	O	
	13	-	-	O	
	14	- -	O	O	

Policy Unit 3: Trinity Road car park to Briardene Burn (SMP 25.2)

9.3.5 This PU is characterised by undefended soft cliffs which are actively eroding. There is some erosion at the southern end of the Trinity sea wall which is planned to be protected in Autumn 2014. Continuing erosion would eventually threaten the car park at Briardene Burn as well as the golf course. The only other asset at risk in this PU is the boatyard at the top of the beach which would be vulnerable to flooding and erosion in the future.

9.3.6 Options shortlisted for this Policy Unit are described in Table 9.6 below:

Table 9.8 Options shortlisted for PU 3

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Managed Realignment	The clay cliffs would be allowed to erode naturally. The interface between the cliffs and the defences at the northern and southern ends of the PU would be managed to avoid outflanking of those defences.

9.3.7 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.9 Summary of effects for PU 3

		O-0	O-1	Comments
SEA Objectives	1	-	-	***The preferred option taken forward is O-1 Managed Realignment***
	2	- -	- -	
	3	-	-	Significant **negative** impacts of this option would be: • Loss of a golf course and a section of PRoW. Loss of a boat house removing this recreational resource from the PU; and, • Loss of several known non-designated archaeological sites through coastal erosion. There are no significant **positive** impacts associated with this option.
	4	O	O	
	5	-	-	
	6	+	+	
	7	+	+	
	8	O	O	
	9	O	O	
	10	-	O	
	11	O	O	
	12	- -	- -	
	13	O	O	
	14	O	O	

Policy Unit 4: Briardene Burn to Table Rocks (SMP 25.3)

9.3.8 This PU is almost entirely defended and provides protection to the urbanised area of Whitley Bay. Defences include a rock revetment on the southern side of Briardene Burn and the Northern and Central Promenades. Assets protected are mainly recreational open space (Whitley Links) a few isolated properties, the A193 and the main sewer that serves Whitley Bay. Options shortlisted for this Policy Unit are described in Table 9.10 below:

Table 9.10 Options shortlisted for PU 4

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Do Minimum	Existing defences would be maintained until the end of their serviceable life. No new defences would be constructed.
2. Maintain	Existing defences would be maintained and then replaced once they reached the end of their serviceable life.
~~3. Managed Realignment~~	Maintain defences to the south to protect properties but allow erosion to occur to the north where the defences protect open space land. The transition between the newly eroding section and the existing defences would be managed to reduce risks of outflanking. *Not retained for the shortlist.*

9.3.9 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.11 Summary of effects for PU 4

		O-0	O-1	O-2	Comments
SEA Objectives	1	- -	-	-	***The preferred option taken forward is O-2 Maintain***
	2	- -	-	-	
	3	- -	-	-	Significant **negative** impacts of this option would be:
	4	O	O	O	• Natural retreat of the coastline inland will be prevented by the maintenance of the existing defences. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species in the Northumbrian Coast SPA.
	5	- -	-	-	
	6	+ +	- -	- -	
	7	+	O	O	
	8	- -	-	O	
	9	- -	-	-	
	10	- -	-	O	There are no significant **positive** impacts associated with this option.
	11	- -	- -	-	
	12	- -	-	-	
	13	O	O	O	
	14	- -	O	O	

Policy Unit 5: Table Rocks to Brown's Point (SMP 25.4)

9.3.10 The northern section of Brown's Bay consists of rock cliffs which are protected by the substantial rock platform of Table Rocks. Brown's Bay has two sections of seawall that are in fair condition and protect the coastal road (Windsor Crescent) and properties inland. Options shortlisted for this Policy Unit are described in Table 9.10 below:

Table 9.12 Options shortlisted for PU 5

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Do Minimum	Existing defences would be maintained until the end of their serviceable life. No new defences would be constructed.
2. Maintain	Existing defences would be maintained and then replaced once they reached the end of their serviceable life.
~~**3. Managed Realignment**~~	Allow natural processes to occur at Table Rocks and manage resumption of erosion in Brown's Bay as the defences fail. *Not retained for the shortlist.*

9.3.11 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.13 Summary of effects for PU 5

		O-0	O-1	O-2	Comments
SEA Objectives	1	-	O	O	***The preferred option taken forward is O-1 Do Minimum***
	2	- -	-	-	
	3	O	O	O	Significant **negative** impacts of this option would be:
	4	O	O	O	• Natural retreat of the coastline inland will be prevented by the maintenance of the existing defences. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species in the Northumbrian Coast SPA.
	5	- -	O	O	
	6	+ +	- -	- -	
	7	+	O	O	
	8	- -	O	O	
	9	O	O	O	
	10	-	-	O	There are no significant **positive** impacts associated with this option.
	11	-	-	O	
	12	O	O	O	
	13	- -	O	O	
	14	- -	O	O	

Policy Unit 6: Brown's Point (SMP 26.1)

9.3.12 Brown's Point consists of hard rocky cliffs and is undefended. Occasional rock falls occur but there are no assets at risk on the cliff top. Options shortlisted for this PU are described in Table 9.10 below:

Table 9.14 Options shortlisted for PU 6

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.

9.3.13 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.15 Summary of effects for PU 6

		O-0	Comments
SEA Objectives	1	O	***The preferred option taken forward is O-0 Do Nothing***
	2	O	Significant **negative** impacts of this option would be: • Permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI. There are no significant **positive** impacts associated with this option.
	3	O	
	4	O	
	5	O	
	6	-	
	7	O	
	8	O	
	9	O	
	10	O	
	11	O	
	12	O	
	13	O	
	14	- -	

Policy Unit 7: Cullercoats Bay (SMP 26.2)

9.3.14 The northern section of this PU is defended by sea walls which extend from Brown's Point to the north pier. There are low concrete walls around the lifeboat station and a stepped concrete apron, known as the Brae, adjacent to the Lifeboat Station and the access ramp. There are concrete walls around the Dove Marine Laboratory and then undefended cliffs leading to further sea walls that continue round the bay to the South Pier. Options shortlisted for this PU are described in Table 9.10 below:

Table 9.16 Options shortlisted for PU 7

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Do Minimum	Existing defences would be maintained until the end of their serviceable life. No new defences would be constructed.
2. Maintain	Existing defences would be maintained and then replaced once they reached the end of their serviceable life.
3. Improve	Existing defences would be maintained and where necessary defences would be replaced to improve the level of flood protection early.
~~**4. Managed Realignment**~~	Manage the removal of defences and allow natural processes to occur. *Not retained for the shortlist.*

9.3.15 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.17 Summary of effects for PU 6

		O-0	O-1	O-2	O-3	Comments
SEA Objectives	1	-	-	-	O	***The preferred option taken forward is O-2 Maintain***
	2	- -	-	-	O	
	3	- -	-	-	O	Significant **negative** impacts of this option would be:
	4	- -	-	-	+	
	5	- -	-	O	O	• Natural retreat of the coastline inland will be prevented by the maintenance of the existing defences. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species in the Northumbrian Coast SPA.
	6	+ +	- -	- -	- -	
	7	+	O	O	O	
	8	- -	-	O	O	
	9	- -	-	O	O	
	10	- -	-	O	-	
	11	- -	- -	-	O	
	12	- -	-	-	O	
	13	- -	-	-	O	There are no significant **positive** impacts associated with this option.
	14	- -	O	O	O	

Policy Unit 8: Tynemouth North Point (SMP 26.3)

9.3.16 Tynemouth North Point consists of hard cliffs with caves and an arch formation. The unit is entirely undefended. Options shortlisted for this PU are described in Table 9.10 below:

Table 9.18 Options shortlisted for PU 8

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
~~**1. Improve**~~	Rock armour placed at toe. *Not retained for the shortlist.*

9.3.17 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.19 Summary of effects for PU 8

		O-0	Comments
SEA Objectives	1	O	***The preferred option taken forward is O-0 Do Nothing***
	2	O	Significant **negative** impacts of this option would be: • Permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI. There are no significant **positive** impacts associated with this option.
	3	O	
	4	O	
	5	O	
	6	O	
	7	O	
	8	O	
	9	O	
	10	O	
	11	O	
	12	O	
	13	O	
	14	- -	

Policy Unit 9: Tynemouth Longsands (SMP 26.4)

9.3.18 The north of the PU is defended by a masonry wall which leads onto a Promenade and access ramp. The central section is undefended but managed sand dunes. A second access ramp located at the southern end of the PU leads to a beach side cafe and the Canoe Club boat house. A sea wall extends to the south and includes the Tynemouth Pool. Options shortlisted for this PU

are described in ***Table 9.20*** below:

Table 9.20 Options shortlisted for PU 9

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Do Minimum	Existing defences would be maintained until the end of their serviceable life. No new defences would be constructed. The dune system would also be managed to protect them from erosion.
2. Maintain	Defences would be maintained and replaced at the end of their serviceable life. Dunes would be managed to protect them from erosion.
3. Maintain	This option includes maintenance the same as Option 2, but includes consideration of construction of rock groynes on the foreshore to retain sediment and stabilise beach levels to provide protection to the dunes and hinterland.
4. Maintain	This option includes maintenance the same as Options 2 and 3, but includes consideration of the construction of an offshore reef to reduce exposure and stabilise beach levels to provide protection to the dunes and the hinterland
~~**5. Managed Realignment**~~	This option includes maintenance of the existing defences the same as options 2, 3 and 4 for the first two SMP2 epochs (i.e. to year 50), but from year 50 onward the dunes would be managed to bring forward the coastline and avoid the need for further linear defences *Not retained for the shortlist.*

9.3.19 A summary of the assessment of strategic alternatives for this policy unit is provided in ***Table 9.21*** below. For full details refer to ***Annex F***.

Table 9.21 Summary of effects for PU 9

		O-0	O-1	O-2	O-3	O-4
SEA Objectives	1	-	-	-	+	+
	2	- -	-	-	?	?
	3	-	-	-	O	O
	4	O	O	O	O	O
	5	- -	O	O	O	O
	6	?	- -	- -	?	?
	7	?	- -	- -	?	?
	8	- -	O	O	O	O
	9	- -	-	-	O	O
	10	- -	-	-	-	-
	11	-	-	O	-	-
	12	- -	- -	- -	+	+
	13	O	O	O	O	O
	14	- -	O	O	O	O

		Comments
		The preferred option taken forward is O-1 Do Minimum Significant **negative** impacts of this option would be: • Natural retreat of the coastline inland will be prevented by the maintenance of the existing defences. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species in the Northumbrian Coast SPA. Part of the dune system could also be lost due to the effects of sea level rise and coastal squeeze; • Loss of Coastal Sand Dune BAP habitat due to rising sea levels leading to more erosion at the base and less material for dune formation; and, • Potential damage to the Tynemouth Open Pool (a historic asset of local interest). Possible exposure of the Lion's Head Fountain leading to damage/loss. There are no significant **positive** impacts associated with this option.

Policy Unit 10: Sharpness Point (SMP26.5)

9.3.20 This unit is made up of hard cliffs that are undefended. The cliffs are highly fractured and experience regular rock falls and slippage. There are access steps to the beach which are heavily abraded. Options shortlisted for this PU are described in ***Table 9.22*** below:

Table 9.22 Options shortlisted for PU 10

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Do Minimum	The cliffs would be allowed to erode naturally. The steps would be maintained and replaced as necessary.
~~**1. Improve**~~	Rock armour placed at toe. *Not retained for the shortlist.*

9.3.21 A summary of the assessment of strategic alternatives for this policy unit is provided in ***Table 9.23*** below. For full details refer to ***Annex F***.

Table 9.23 Summary of effects for PU 10

		O-0	O-1	Comments
SEA Objectives	1	O	O	***The preferred option taken forward is O-0 Do Nothing***
	2	- -	-	Significant **negative** impacts of this option would be: • Access to the beach permanently restricted through lack of steps; and, • The pumping station on Sharpness Point could be at risk of erosion. Loss of this infrastructure could affect the quality of water receptors. Significant **positive** impacts of this options would be: • Natural retreat of the coastline inland resulting in the creation of new rocky shore habitat. This will benefit European protected species in the Northumbrian Coast SPA.
	3	O	O	
	4	O	O	
	5	O	O	
	6	+ +	+	
	7	-	-	
	8	- -	- -	
	9	O	O	
	10	O	O	
	11	O	O	
	12	O	O	
	13	O	O	
	14	O	O	

Policy Unit 11: Tynemouth Shortsands (King Edward's Bay) (SMP 26.6)

9.3.22 King Edward's Bay is protected by a number of sea walls forming a promenade around the bay. Above the defences are slopes and cliffs. The coastal road (Sea Banks) runs along the top of the cliff and would be the main asset at risk. Options shortlisted for this PU are described in

Table 9.10 below:

Table 9.24 Options shortlisted for PU 11

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Do Minimum	Existing defences would be maintained until the end of their serviceable life. No new defences would be constructed.
2. Maintain	Existing defences would be maintained and then replaced once they reached the end of their serviceable life.
~~**3. Managed Realignment**~~	Manage the removal of defences as they fail and natural erosion occurs. *Not retained for the shortlist.*

9.3.23 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.25 Summary of effects for PU 11

		O-0	O-1	O-2	Comments
SEA Objectives	1	O	O	O	***The preferred option taken forward is O-2 Maintain***
	2	- -	-	-	
	3	O	O	O	Significant **negative** impacts of this option would be:
	4	O	O	O	• Natural retreat of the coastline inland will be prevented by the maintenance of the existing defences. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species in the Northumbrian Coast SPA;
	5	- -	O	O	
	6	+ +	- -	- -	• Part of the Tynemouth Priory and Castle SAM area could be lost due to erosion;
	7	O	O	O	
	8	- -	- -	O	• Partial loss of iconic historic assets (Priory earth works) could result in a permanent alteration to the historic landscape.
	9	O	O	O	
	10	- -	- -	O	There are no significant **positive** impacts associated with this option.
	11	- -	- -	- -	
	12	- -	O	O	
	13	- -	- -	- -	
	14	O	O	O	

Policy Unit 12: Tynemouth Head (SMP 26.7)

9.3.24 Tynemouth Head consists of rock cliffs that are fractured and suffers from regular rockfalls. Tynemouth Priory and Castle (a Schedule Ancient Monument) sits above the cliffs and some cliff stabilisation work has been undertaken to manage erosion of the headland. Options shortlisted for this PU are described in Table 9.10 below:

Table 9.26 Options shortlisted for PU 12

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Do Minimum	The existing cliff stabilisation works would be maintained and new structures constructed as necessary
~~**2. Improve**~~	Rock armour placed at toe or more cliff stabilisation buttresses put in place. *Not retained for the shortlist.*

9.3.25 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.27 Summary of effects for PU 12

		O-0	O-1	Comments
SEA Objectives	1	O	O	***The preferred option taken forward is O-0 Do Nothing***
	2	O	O	Significant **negative** impacts of this option would be: • Potential for some archaeology within the Tynemouth Priory and Castle SAM grounds to be lost. Significant **positive** impacts of this options would be: • Natural retreat of the coastline inland resulting in the creation of new rocky shore habitat. This will benefit European protected species in the Northumbrian Coast SPA.
	3	-	-	
	4	O	O	
	5	O	O	
	6	+ +	?	
	7	-	O	
	8	O	O	
	9	O	O	
	10	O	O	
	11	- -	- -	
	12	O	O	
	13	O	O	
	14	O	O	

Policy Unit 13: Tynemouth North Pier (SMP 26.8)

9.3.26 Tynemouth North Pier is approximately 1.7km long and provides shelter to the mouth of the Tyne. The structure is in good condition and while it does not directly protect and assets it does provide protection to areas up river. The PU extends beyond the pier into a small bay known as Prior's Haven and covers a small revetment which runs alongside the access track to the North Pier. Options shortlisted for this PU are described in Table 9.10 below:

Table 9.28 Options shortlisted for PU 13

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
1. Do Minimum	Existing defences would be maintained and replaced once they reach the end of their serviceable life. Port Authority would continue to maintain the North Pier as necessary.
~~**2. Sustain**~~	Raise crest levels of the Pier to prevent overtopping. *Not retained for the shortlist.*

9.3.27 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.29 Summary of effects for PU 13

		O-0	O-1	Comments
SEA Objectives	1	- -	O	There are no significant **negative** impacts associated with this option. There are no significant **positive** impacts associated with this option.
	2	- -	O	
	3	-	O	
	4	- -	O	
	5	?	O	
	6	?	O	
	7	O	O	
	8	O	O	
	9	- -	O	
	10	- -	O	
	11	- -	-	
	12	- -	O	
	13	- -	O	
	14	O	O	

Policy Unit 14: Prior's Haven (SMP 27.1)

9.3.28 Prior's Haven contains a small sandy beach and is backed by undefended coastal slopes. Some of the slopes show signs of slippage. Within the bay and located on the beach is the Tynemouth Sailing Club boathouse. Options shortlisted for this PU are described in Table 9.10 below:

Table 9.30 Options shortlisted for PU 14

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken on existing defences and no new defences would be constructed.
~~**1. Improve**~~	Rock armour placed at toe. *Not retained for the shortlist.*

9.3.29 A summary of the assessment of strategic alternatives for this policy unit is provided in Table 9.4 below. For full details refer to ***Annex F***.

Table 9.31 Summary of effects for PU 14

		O-0	Comments
SEA Objectives	1	-	***The preferred option taken forward is O-0 Do Nothing***
	2	- -	Significant **negative** impacts of this option would be: • Assets associated with Tynemouth Sailing Club would be at risk, compromising this form of recreation in the PU. Some PRoW leading onto the beach could be lost due to erosion; • Partial loss of the car park on the headland above Prior's Haven as a result of erosion; • Loss of local drainage/sewer infrastructure serving properties on Pier Road.
	3	-	
	4	O	
	5	- -	
	6	+ +	Significant **positive** impacts of this options would be: • Natural retreat of the coastline inland resulting in the creation of new rocky shore habitat. This will benefit European protected species in the Northumbrian Coast SPA.
	7	O	
	8	- -	
	9	O	
	10	-	
	11	O	
	12	-	
	13	O	
	14	O	

Policy Unit 15: Tynemouth (The Flats) (SMP 27.2)

9.3.30 This unit covers the coastline from the headland south of Prior's Haven into the mouth of the River Tyne and up to Fish Quay. Structures include sea walls, a rock revetment and the quays. Commercial assets located around Fish Quay are currently at risk of flooding. Options shortlisted for this PU are described in ***Table 9.32*** below:

Table 9.32 Options shortlisted for PU 15

Short Listed Options	Description
0. Do Nothing	No maintenance would be undertaken and no new defences would be constructed.
1. Do Minimum	The existing defences would be maintained until the end of their serviceable life.
2. Maintain	Existing defences would be maintained and new defences constructed to replace them as necessary.
3. Sustain	Existing defences would be maintained and replaced as necessary. Replacement defences would be constructed to provide the same standard of protection taking into account sea level rise.
4. Improve	New defences would be constructed to replace the existing defences earlier than for O3 and would provide the standard of protection anticipated to be required due to future estimates of sea level rise.
~~**5. Managed Realignment**~~	*Not retained for the shortlist.*

9.3.31 A summary of the assessment of strategic alternatives for this policy unit is provided in ***Table 9.33*** below. For full details refer to ***Annex F***.

Table 9.33 Summary of effects for PU 15

		O-0	O-1	O-2	O-3	O-4	Comments
SEA Objectives	1	- -	- -	-	O	+ +	***The preferred option taken forward is O-2 Maintain***
	2	- -	-	O	O	O	
	3	- -	O	O	O	O	Significant **negative** impacts of this option would be:
	4	- -	-	O	O	+ +	• Assets around the fish quay would be more at risk to flooding over time due to the effects of climate change;
	5	- -	- -	- -	O	+ +	• Natural retreat of the coastline inland will be prevented. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species in the Northumbrian Coast SPA;
	6	+ +	- -	- -	- -	- -	
	7	+	O	O	- -	- -	
	8	- -	O	O	O	O	
	9	- -	-	-	O	O	
	10	- -	-	O	- -	- -	
	11	- -	-	-	-	-	
	12	- -	-	-	-	-	
	13	- -	-	-	-	-	There are no significant **positive** impacts associated with this option.
	14	O	O	O	O	O	

9.4 Summary of Preferred Options

The SEA Directive requires:

An outline of the reasons for selecting the alternatives dealt with... (Annex 1 (h))

9.4.1 ***Table 9.34*** below summaries the preferred options selected for each PU and the reasons for each selection.

Table 9.34 Summary of Preferred Options

Policy Unit	Preferred Option	Reason for Selection
1	**Do Nothing (0)**	This option has primarily been selected for environmental reasons but is supported by economic factors. By allowing the natural retreat of the coastline inland to continue, impacts of sea level rise on the internationally important Northumbria Coast SPA will be reduced over the course of the Strategy. Due to their possible use as emergency access and the archaeological interest in the exposed coal measures on the foreshore, it is likely that North Tyneside Council will continue to maintain the steps from their own budgets in the medium term.
2	**Do Minimum (1)**	The Do Minimum option has been selected as the preferred option as it provides protection to the headland and thus maintains beneficial sheltering effects that it provides to the coastline to the south. This cannot be quantified at this stage, but it is considered that if the headland were to be eroded the costs of maintaining defences to the south would be significantly increased in the long term. While it does not act as a defence structure in itself it is likely that the causeway to St. Mary's Island will be maintained and improved as necessary to ensure access to the island for tourism.
3	**Managed Realignment (1)**	This option has been selected for environmental and technical reasons. The majority of the unit will be allowed to erode naturally benefiting nationally protected species within the Northumberland SSSI. Locally important recreational resources (a golf course and a section of PRoW) will eventually be lost however the northern and southern ends of the PU will be managed to ensure the defences in neighbouring units are not outflanked. Although there are no proposals for defences within this PU there will be a requirement for some works within the PU.

Policy Unit	Preferred Option	Reason for Selection
4	**Maintain (2)**	This option has primarily been selected for economic reasons as the defences currently in place protect a large number of properties and a main sewer behind the defences at Central Promenade. The environmental effects are less significantly adverse in comparison to the other shortlisted options although coastal squeeze will have the potential for negative impacts on the Northumbrian Coast SPA in this policy unit over the long term. At the time of writing this report North Tyneside Council is proceeding with a scheme to replace Central Promenade that is being partly funded by the Council and Northumbrian Water Ltd, the owners of the sewerage infrastructure.
5	**Do Minimum (1)**	Do Minimum allows for the existing defences to be maintained. As the defences reach the end of their effective lifespan the viability of the Maintain option should be reconsidered.
6	**Do Nothing (0)**	Brown's Point is currently undefended and there are no assets at risk from flooding or erosion in this policy unit. Some geological features associated with the Tynemouth to Seaton Sluice SSSI will be eroded and lost however the rates of erosion are slow on this headland. This option has primarily been selected for economic reasons.
7	**Maintain (2)**	This option has been selected primarily for economic and technical reasons. Maintain will continue to provide protection to the properties within the Bay, especially the lifeboat station. If beach levels drop there may be a need to extend the access ramp. The Brae will be maintained, but not improved as although it is currently used for storing boats, this is not its intended function and the official boat storage yard is adjacent to the road above the Bay. During consultation it was noted that it is difficult for trailers to be towed from the access ramp onto the highway. This issue could be considered by the Highway Authority to investigate if any improvements could be made.
8	**Do Nothing (0)**	Tynemouth North Point is currently undefended and there are no assets at risk from flooding or erosion in this policy unit. Some geological features associated with the Tynemouth to Seaton Sluice SSSI will be eroded and lost however the rates of erosion are slow on this headland. This option has primarily been selected for economic reasons.

Policy Unit	Preferred Option	Reason for Selection
9	**Do Minimum (1)**	The Do Minimum option has been selected mainly due to the high costs of undertaking more extensive works in comparison to the value of benefits. Under this option the ecologically important dune system will still be managed, but may eventually suffer from coastal squeeze. North Tyneside Council has proposals for future schemes to undertake works to maintain the sea walls and these may require funding to be secured from sources other than grant in aid for flood and coastal erosion. The SMP2 policy of managed realignment in the second epoch (years 20-50) should be reconsidered nearer that time to determine whether it may become viable. The preferred option does not preclude the removal of Tynemouth Outdoor Pool if it is not to be maintained, as this will allow the sea wall to be reconstructed in line with the existing sea walls on either side of the pool.
10	**Do Nothing (0)**	This option has been selected primarily for economic reasons. Sharpness Point is currently undefended and there are no assets at risk from flooding or erosion in this policy unit. Access to the beach would eventually be lost.
11	**Maintain (2)**	Maintain is selected as the preferred option as, despite it not being the most economically preferable option, it provides protection to properties in Sea Banks and Percy Gardens and also maintains protection to the Priory.
12	**Do Nothing (0)**	This option has been selected primarily for economic reasons. Do Nothing being the preferred option does not preclude maintenance of the cliff stabilisation works by English Heritage.
13	**Do Minimum (1)**	This option has been selected primarily for economic reasons. It is assumed that the Port Authority will continue to maintain the Pier.
14	**Do Nothing (0)**	This option has been selected primarily for economic reasons. It may be appropriate for property level protection to be provided to the properties that may be at risk of flooding.
15	**Maintain (2)**	Maintain is selected as the preferred option as it allows for protection of properties and businesses in the immediate area and further into the Tyne. These benefits are not reflected in the economic appraisal as their assessment was outside the scope of the strategy. It may be appropriate to provide property level protection to those properties at risk of flooding.

9.5 Cumulative Effects

9.5.1 Cumulative effects refer to the collective influence of all preferred alternatives identified within the Coastal Strategy on a particular aspect of the environment or a particular objective.

9.5.2 Cumulative impacts have been identified based upon the environmental effect of the preferred option selected in each Policy Unit. The significance of these effects has then been tabulated in

the matrix show in ***Table 9.35*** below. This highlights where multiple effects have been identified against a single SEA objective across the whole of the study area.

Table 9.35 Cumulative effects across all Policy Units

SEA Objectives	Policy Unit														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	O	-	-	-	O	O	-	O	-	O	O	O	O	-	-
2	- -	-	- -	-	-	O	-	O	-	- -	-	O	O	- -	O
3	O	-	-	-	O	O	-	O	-	O	O	-	O	-	O
4	O	O	O	O	O	O	-	O	O	O	O	O	O	O	O
5	O	-	-	-	O	O	O	O	O	O	O	O	O	- -	- -
6	+ +	- -	+	- -	- -	-	- -	O	- -	+ +	- -	+ +	O	+ +	- -
7	-	O	+	O	O	O	O	O	- -	-	O	-	O	O	O
8	O	O	O	O	O	O	O	O	O	- -	O	O	O	- -	O
9	O	O	O	-	O	O	O	O	-	O	O	O	O	O	-
10	-	-	O	O	-	O	O	O	-	O	O	O	O	-	O
11	-	-	O	-	-	O	-	O	-	O	- -	- -	-	O	-
12	- -	-	- -	-	O	O	-	O	- -	O	O	O	O	-	-
13	O	-	O	O	O	O	-	O	O	O	- -	O	O	O	-
14	- -	O	O	O	O	- -	O	- -	O	O	O	O	O	O	O

9.5.3 Key cumulative effects have been identified against objectives 2, 6, 12 and 14 (highlighted above). These are discussed further below.

SEA Objective 2: Promote good health and well being through the provision of, and access to, coastal recreational resources.

9.5.4 Across the whole study area significant adverse effects against this objective include:

- Loss of a section of PRoW and National Cycleway and eventual loss of access to the beach once steps are unviable (PU1);
- Loss of a golf course and a section of PRoW. Loss of a boat house removing this recreational resource from the PU (PU3);
- Access to the beach permanently restricted through lack of steps (PU 10); and,
- Assets associated with Tynemouth Sailing Club would be at risk, compromising this form of recreation in the PU. Some PRoW leading onto the beach could be lost due to erosion (PU14).

9.5.5 Minor negative impacts include temporary restrictions to PRoW, promenades and cycle routes if defences are breached or flooding occurs (PU2, PU4, PU5 and PU9).

SEA Objective 6: Protect and seek to enhance sites designated for their nature conservation value.

9.5.6 Across the whole study area significant adverse effects against this objective include:

- Natural retreat of the coastline inland will be prevented by the maintenance of the existing defences. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species in the Northumbrian Coast SPA (PU 2, PU4, PU5, PU6, PU9, PU11 and PU16);

9.5.7 Across the whole study area significant positive effects against this objective include:

- Natural retreat of the coastline inland will be permitted resulting in the creation of new rocky shore habitat. This will benefit European protected species in the Northumbrian Coast SPA (PU1, PU10, PU12 and PU14);

9.5.8 Minor negative impacts include minor loss of local biodiversity due to erosion of cliff top grassland (Brown's Point SLCI) (PU6). Minor positive impacts include allowing the coastline to retreat naturally in-land (except where neighbouring PU defences connect) resulting in the creation of boulder and cobble beaches. This will benefit nationally protected species within the Northumberland Shore SSSI and counteract the effects of sea level rise (PU3).

SEA Objective 12: Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.

9.5.9 Across the whole study area significant adverse effects against this objective include:

- Loss of several known non-designated archaeological sites through coastal erosion (PU1, PU3);

- Potential damage to the Tynemouth Open Pool (a historic asset of local interest). Possible exposure of the Lion's Head Fountain leading to damage/loss (PU9);

9.5.10 Minor negative impacts include potential damage to locally listed structures (i.e. Panama Gardens the Rendezvous Cafe, Grant's Clock, the Rex Hotel, Dove Marine Laboratory, Tynemouth Sailing Hut, the Fishermans Mission, Quay Master Office, Knott Memorial Flatts and Old Coastguard Cottages) if flooding becomes more of a risk through climate change (PU4, PU7, PU14 and PU15).

SEA Objective 14: Protect and seek to enhance sites designated for their geological interest.

9.5.11 Across the whole study area significant adverse effects against this objective include:

- Permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI (PU1, PU6 and PU9).

9.6 Limitations of the Assessment

The SEA Directive requires:

...a description of how the assessment was undertaken including any difficulties (such as technical deficiencies and lack of know-how) encountered in compiling the required information... (Annex 1 (h))

9.6.1 Due to the complexity of environmental systems and processes it can be difficult to predict how certain actions are likely to effect the environment, particularly for high level plans spanning a long period of time (i.e. 100 years). The assessment presented in this report should be interpreted with a full understanding of the extent of any uncertainties or data limitations. As such the following limitations of the assessment are highlighted:

- The environmental assessment is based on modelled erosion rates under the 'do nothing' scenario. The erosion contours produced for each epoch provide an indication of the extent of coastline lost and any assets within this area. Whilst the modelling results do account for anticipated effects of climate change there is a great deal of uncertainty with regard to how much erosion rates will be accelerated, if any, and particularly in the later epochs. Details on local geological conditions not accounted for in this high level assessment may also have an influence on the rate of erosion.

- An understanding of the environmental baseline has been prepared using all available datasets and through a series of stakeholder and public consultation events. However some datasets (e.g. Census information) is relatively old. Other datasets need enhancing to provide information at a more local level (i.e. visitor counts, pedestrian counts).

- Effects on international and national ecological sites (i.e. Northumbrian Coast SPA and Northumbrian Shore SSSI) are based upon the assumption that a loss of habitat area alone will have a direct impact on the integrity of the site. Detailed data on the location and number of protected species within these designated areas will be required before impacts on integrity are fully understood.

10. Mitigation

The SEA Directive requires:

The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme... (Annex 1 (g))

10.1 Introduction

10.1.1 Mitigation measures aim to avoid, minimise, remedy or compensate for the predicted significant adverse effects of a plan, programme or project. The purpose of any mitigation measure is to eliminate the impact, or where this is not possible, reduce its significance. If impacts still remain then the next option should be to remedy the damage or compensate for it.

10.1.2 Mitigation is generally proposed in accordance with a mitigation hierarchy which focuses on the principle of prevention rather than cure. This is summarised below in descending order of preference:

- **Impact avoidance:** wherever possible mitigation should enable the predicted impact to be avoided;
- **Impact reduction:** where avoidance is not possible then mitigation should aim to reduce the significance of the effect;
- **Compensation:** where the significance of effect cannot be reduced to an acceptable level then proposals should be put forward to offset the impact. This may take the form of enhancement.

10.1.3 The process of defining mitigation for impacts of a plan, programme or project is iterative and continuous throughout each stage of design development. The different levels of mitigation which can be applied are as follows:

- **Strategic mitigation:** a consideration of alternative sites;
- **Mitigation through design:** changes to aspects of the scheme layout and changes to methods or materials used in construction;
- **Mitigation through management:** measures generally covering the potential impacts to the environment from construction e.g. dust control, working hours, control of pollution incidents.

10.2 Proposed Mitigation (Task B5)

10.2.1 Strategic mitigation is intrinsic to the assessment of alternatives covered by this Environmental Report. A number of options for coastal management have been considered and an assessment of their environmental effects (alongside other technical, economic and social factors) has been used to select those options that are most acceptable. For more details refer to ***Section 9.3*** above.

10.2.2 Due to the high level nature of this report, the design features of the preferred options and the nature of their construction are yet to be confirmed in detail. Nevertheless, it is intended that the mitigation measures proposed in ***Table 10.1*** below in relation to design and management should be taken forward into the next stage of individual scheme development (i.e. project level EIA if required) to mitigate likely significant effects on the environment as identified in this report.

Table 10.1 Proposed Mitigation

Environmental Topic	Mitigation Type	Description
Population, Human Health and Recreation	Reduce	• Consolidate the public access provision onto the shore through design, avoiding access to areas where wintering and wading birds maybe disturbed (i.e. reduce disturbance by dogs). • Ensure a communication strategy is in place prior to the design and construction of any projects to provide effective communication to local communities and 'buy in' of proposals.
	Compensate	• Produce a ***'Coastal Public Access Strategy'*** to ensure that any loss of access to the shore through consolidation is compensated for in other appropriate areas. • Relocate/divert PRoW and cycleways inland on undefended sections. • Improve surfacing/furniture on nearby recreation routes to compensate for any lost sections.
Local Economy	Avoid	• Construction works should be timed to take place outside the main tourist seasons to avoid potential impacts on local tourist attractions. • Educate local businesses of the risks from flooding and erosion. • Support local businesses in preparing applications for grants/funding for localised flood defences or warning systems (i.e. flood guards fitted to properties).
Transport	Avoid	• Construction activities should be timed/ located to avoid closure of the key transport routes or during peak flow periods.

Environmental Topic	Mitigation Type	Description
	Reduce	• Where infrastructure is at risk of flooding work with the local highway authority to ensure appropriate warning signs are in place.
Biodiversity, Flora and Fauna	Avoid	• Time construction operations to avoid impacts on the qualifying features of designated sites i.e. works should take place between 31st March and 30th September to avoid disturbance to wintering birds within the Northumberland Coast SPA/Ramsar. • Foreshore surveys should be undertaken to gain a better understanding of species numbers and their favoured location along the coast. This information should be used to inform the appropriate design of options and access to the coast.
	Reduce	• Any land take for a works compound should offer a sufficient area as to provide safe roots for any birds within it. • Access management to areas of habitat within the MPZ to reduce disturbance to roosting or feeding birds. • Produce a '***Coastal Public Access Strategy***' to consolidate access along the coast and reduce disturbance to species in the most sensitive areas. • Produce information boards on site or undertake talks for schools/community groups to educate the community on the importance of protected species along the coast.
	Compensate	• Compensate for loss of habitat through strategic habitat creation/managed retreat on equivalent substrates elsewhere (but within the range of the species population). Due to a lack of suitable areas within the study it is proposed that a 'Regional Habitat Creation Programme' is established to identify potential sites. • Habitat creation should be incorporated into hard structures where appropriate e.g. incorporating ledges into hard sea defences to act as secure high tide roosts.
Water	Avoid	• Liaise with utilities companies to identify any possible infrastructure at risk due to the adopted policies. Work with the utility companies to ensure apparatus is relocated, protected or upgraded.
Landscape/ Seascape and Visual Amenity	Reduce	• Proposals should be sensitive to the local townscape, seascape and landscape character. • Design elements of any proposals should adhere to the overall requirements of the Coastal Masterplan ensuring the materials used, street furniture and signage are consistent along the coast.

Environmental Topic	Mitigation Type	Description
Cultural Heritage	Reduce	• Put an archaeological watching brief in place for any construction activities taking place within proximity to known archaeological sites or where there is a high potential for unknown archaeology. • Conduct a measured survey/photographic record of locally designated cultural assets at risk and deposit information in the Historic Environmental Record/ local archive centre.

10.3 Consents

10.3.1 As identified in the environmental baseline (see ***Section*** 6) the majority of the North Tyneside Coastline is protected by various national and international designations i.e. Northumbria Coast SPA and Ramsar Site, Tynemouth to Seaton Sluice SSSI and Northumberland Shore SSSI. Any coastal defence works that are undertaken with the potential for significant effects on these sites may be subject to a number of additional consents and/or licences.

10.3.2 ***Table 10.2*** below summarises potential consents and licences that may be required for projects identified through the Coastal Strategy.

Table 10.2 Consents and Licences for Coastal Defence Options

Consent /Licence	Description
Marine Licences	In accordance with Part 4 of the Marine and Coastal Access Act 2009, regulated activities to be undertaken below or near the Mean High Water Spring (MHWS) tide level will be subject to a Marine Licence. These activities include constructing, altering or improving any works in or over the sea. There are some exemptions with regard to maintenance of coastal protection works carried out on behalf of the EA or coast protection authority, which providing the activity is carried out within the existing boundaries, will not require a licence. The Marine Management Organisation (MMO) is responsible for the administration of Marine Licences in English inshore and offshore waters.
Planning Permission	Development works taking place on land within the Local Planning Authorities (LPA) jurisdiction may also require planning consent. This is normally development on any land above the Mean Low Water Mark (MLWM) but some LPA boundaries may also extend out across rivers and estuaries. Section 55 of the Town and Country Planning Act 1990 defines what constitutes planned development however most new or replacement structures, or major changes, are likely to require consent. Repair works such as essential maintenance are likely to be exempt. For developments that cross the land/sea boundary the LPA and MMO will take a decision as to who should be the lead authority for an application.

Consent /Licence	Description
Environmental Impact Assessment	Marine activities seeking approval under the Marine and Coastal Act 2009 are subject to the provisions of the Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended). Developments works seeking approval under the Town and Country Planning Act 1990 are subject to the provisions of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011. Both sets of regulations ensure that before a marine licence/planning consent can be granted by the competent authority (MMO/LPA), it must ensure that applications are subject to EIA where necessary. The options taken forward from the Coastal Strategy should be subject to a screening exercise to identify if EIA is a requirement.
Habitat Regulations Assessment	Screening for a Habitat Regulations Assessment (HRA) will be required for any works within or which have the potential to affect a 'European Site' (i.e. a SAC, SPA, MCZ or Ramsar site). A strategic level HRA (and Appropriate Assessment) accompanies the Coastal Strategy however the assessment will also have to be completed for any project level schemes taken forward.
Wildlife Licences	A Wildlife Licence is needed for anyone who wishes to undertake an action which is prohibited under wildlife legislation such as the Wildlife and Countryside Act, 1981 or The Conservation of Species and Habitats Act, 2010. Activities include the killing of, surveying of, disturbing of and/or damaging the habitat of protected species. Examples include otters, bats, great crested newts, water voles, marine turtles, dolphins and porpoises. Natural England are responsible for issuing Wildlife Licences landward of the MLWM (usually within 30 working days). The MMO are responsible for issuing licences seaward of the MLWM (usually within 6 weeks).
SSSI Works Notification	For certain work activities affecting a Site of Special Scientific Interest (SSSI) a formal notification to Natural England is required. Notices for an operation which will not damage the special interest of a site are likely to be consented however there may be time limits attached to this consent. If works require other consents i.e. planning permission/marine licence then a separate SSSI Works Notification is not required as the competent authority will automatically consult with Natural England as a statutory consultee.
Scheduled Monument Consent	An 'Application for Scheduled Monument Consent' (SMC) should be made to the Secretary of State for Culture, Media and Sport for any works which might affect a Scheduled Monument either above or below ground level.

11. Implementation and Monitoring

The SEA Directive requires:

A description of the measures envisaged concerning monitoring in accordance with Article 10... (Annex 1 (i))

11.1 Introduction

11.1.1 SEA Directive requires any potentially significant environmental effects arising from the implementation of a plan or programme to be monitored. This is to identify the scale and magnitude of these effects at an early stage and also to allow appropriate remedial action to be undertaken where appropriate. This section provides details of the implementation and monitoring requirements for the Coastal Strategy.

11.2 Implementation and Monitoring (Task B6)

11.2.1 The key principles of implementation and monitoring are to:

- Ensure proposed mitigation measures are fully implemented and are effective;
- Monitor all the significant environment effects identified during the assessments and documented in the Environmental Report. This includes all significant positive, negative, foreseen and unforeseen environmental effects; and,
- Avoid the duplication of monitoring by utilising any existing monitoring programmes.

11.2.2 Forty indicators and their targets have been identified to determine if the Coastal Strategy is meeting its environmental objectives. In the majority of cases the data required to monitor these indicators is already being collected either by North Tyneside Council or other statutory bodies (i.e. Environment Agency, Heritage England or Natural England). Some indicators however, will require North Tyneside Council to collect further information to facilitate future strategy reviews, namely:

- **Coastal Evolution –** monitoring the coastal evolution is an essential part of appraising the performance of the Strategy. Monitoring should include topographical surveys of beach levels and grading, cliff top and bottom positions and the MHWS mark. An understanding of the coastal evolution will help to monitor the rates of coastal erosion/accretion and possible effects on the extent of rocky shore with coastal squeeze.
- **Non Motorised User (NMU) Trip Surveys –** these surveys will facilitate an understanding of the numbers of pedestrians/cyclists using coastal routes and

accessing the beach. They will help to inform any future access rationalisation on the coast to reduce disturbance to protected species within the internationally designated conservation sites.

- **Ecological Surveys –** sites along the coast designated for their ecological importance should be monitored to establish their condition. Of particular importance are the Northumbrian Coast SPA and Northumbrian Shore SSSI which are currently monitored by Natural England. Additional surveys however, (i.e. bird counts) will help to identify which parts of the SPA/SSSI are frequented by protected species and in turn, which areas are most sensitive to disturbance either by construction activities or recreation.

11.2.3 Table 11.1 below lists the indicators and targets for monitoring against each of the SEA objectives. Likely data sources and their owners are also identified.

Table 11.1 Indicators and targets for monitoring the Coastal Strategy

	SEA Objectives		Indicators		Targets	Owner / Data
Population, Human Health and Recreation	1	**Ensure people and property are protected against coastal erosion and flooding risk.**	a	Number of properties at risk from flooding.	No increase in the number of properties at risk from flooding.	EA – Flood Risk Mapping
			b	Number of properties at risk from coastal erosion.	No increase in the number of properties at risk from coastal erosion.	NTC – erosion mapping*
			c	Number of defences maintained in a 'good' condition.	All defences maintained in a 'good' condition.	NTC – coastal defence condition surveys
	2	**Promote good health and well being through the provision of, and access to, coastal recreational resources.**	a	Area measurement of green infrastructure provision along the coast.	No reduction in the area of green infrastructure provision.	NTC – green infrastructure allocations
			b	Length of PRoW and cycle ways within the study area.	No reduction in the length of PRoW and cycleways.	NTC – PRoW/ Cycleways
			c	Number of people with 'good health' in the coastal wards.	No reduction in the number of people classified as having 'good health' from 2011 baseline.	Office for National Statistics - Census
			d	Number of beaches awarded Blue Flag and Quality Award Status.	Achieve Blue Flag status on all beaches. Achieve Quality Award status on all beaches.	NTC – Blue Flag status
			e	Number of pedestrian/cyclist trips on coastal routes.	No reduction in the number of pedestrian/cyclist trips on coastal routes.	NTC – NMU trip surveys*

	SEA Objectives		Indicators		Targets	Owner / Data
Local Economy	3	**Support the local economy through protection of assets related to the tourism industry.**	a	Number of assets related to the tourism industry at risk from flooding.	No increase in the number of assets related to the tourism industry at risk from flooding.	EA – Flood Risk Mapping
			b	Number of assets related to the tourism industry at risk from coastal change/erosion.	No increase in the number of assets related to the tourism industry at risk from coastal change/erosion.	NTC – erosion mapping*
			c	Revenue from assets related to the tourism industry.	No loss of revenue for commercial assets related to the tourism industry as a result of flooding and/or coastal erosion.	Various (to be collated by NTC) – revenue from visitor attraction ticket sales
			d	Number of people employed in the tourism industry.	No reduction in the number of people employed by the tourism industry due to flooding and/or coastal erosion.	Office for National Statistics - Census
			e	Revenue from high profile temporary events.	No loss of areas used to host high profile temporary events on the coast.	NTC – revenue from event ticket sales
	4	**Recognise and support the role of the fishing and port based industries when considering coastal defence options.**	a	Number of people employed in the fishing and port based industries.	No increase in the number of assets related to the fishing and/or port based industries at risk from flooding.	Office for National Statistics - Census
			b	Number of commercial assets at risk from flooding.	No increase in the number of assets related to the fishing and/or port based industries at risk from coastal change/erosion	EA – Flood Risk Mapping
			c	Number of commercial assets at risk coastal erosion.	No loss of revenue from commercial assets related to the fishing and/or port based industries as a result of flooding and/or coastal erosion.	NTC – erosion mapping*
Transport	5	**Ensure that the transport infrastructure is protected from coastal change and flooding risk.**	a	Length of the transport infrastructure at risk from flooding.	No increase in the length of the transport infrastructure at risk from flooding.	EA – erosion mapping*
			b	Length of the transport infrastructure at risk from coastal change/erosion.	No increase in the in the length of the transport infrastructure at risk from coastal change/erosion.	NTC – erosion mapping*
Biodiversity, Flora and Fauna	6	**Protect and seek to enhance sites designated for their nature conservation value.**	a	Area measurement of internationally designated sites within the study area.	No reduction in the reported extent of internationally designated sites.	NTC – erosion mapping*
			b	Area measurement of nationally designated sites within the study area.	No reduction in the reported extent of nationally designated sites.	NTC – erosion monitoring*
			c	Number of SSSI units with a ‘favourable’ condition	No reduction in the number of SSSI units maintained in a favourable condition.	NE – condition status. NTC – protected species surveys*

	SEA Objectives		Indicators		Targets	Owner / Data
	7	**Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management, including priority habitats indicated in BAPs.**	a	Number of UKBAP/LBAP habitats in favourable condition.	No reduction of the number of habitats in favourable condition	NTC – LBAP site condition monitoring
			b	Number of targets in the UKBAP/LBAP achieved.	. Have a positive contribution to targets identified in the UKBAP/LBAP.	NTC – LBAP monitoring
Water	8	**Minimise pollution to coastal and surface waters and ensure targets established by the Water Bathing Directive and Water Framework Directive are not compromised.**	a	Bathing Waters Directive annual compliance monitoring results.	Maintain 'higher' compliance status at all beach monitoring points under BWD.	EA – BWD monitoring
			b	Water Framework Directive monitoring results.	No reduction to ecological and chemical water quality status as assessed under the WFD.	EA – WFD monitoring
			c	Blue Flag status of beaches.	Achieve Blue Flag status on all beaches.	NTC – Blue Flag status
			d	Quality Award status of beaches	Achieve Quality Award status on all beaches.	NTC – Quality Award Status
Land Use	9	**Protect and enhance existing and proposed land uses.**	a	Extent of brown field land identified for regeneration brought back into use.	No release of contaminants that may result in pollution.	NTC – development control data
			b	Extent and standard of protection for areas of contaminated land.	No loss of sustainable land use or conflicts with planned sustainable land use.	NTC – development control data
			c	Extent of land identified in the Local Plan as appropriate for the fishing industry, used for this purpose	No loss in the extent of land appropriately used by the fishing industry	NTC – development control data
			d	Extent of land identified in the Local Plan as appropriate for port based industry, used for this purpose	No loss in the extent of land appropriately used by port based industries.	NTC – development control data
Landscape/ Seascape and Visual Amenity	10	**Protect and enhance landscapes and seascapes though sympathetic coastal defence management.**	a	Visual amenity for seafront properties.	No adverse impacts on existing landscape character and visual amenity.	NTC – planning application determination

	SEA Objectives		Indicators		Targets	Owner / Data
Cultural Heritage	11	**Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.**	a	Condition of designated historic assets.	No loss or damage to designated heritage assets.	HE – condition surveys
			b	Properties on the Heritage at Risk Register	No properties within the study area added to the Heritage at Risk Register	HE – Heritage at Risk Register
			c	Number of visits/admissions to historic assets.	Maintain or increase the number of visits/admissions to historic assets.	HE – visitor attraction counts
	12	**Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.**	a	Number of sites on the Local Register	No loss of non-designated assets of local interest (appearing on the Local Register).	NTC – Local Register
	13	**Maintain and where possible, enhance the distinctiveness and historic character of local settlement.**	a	Conservation area appraisals.	No loss or damage to places or spaces which contribute to the local distinctiveness and historic landscape character.	NTC – conservation area appraisals
			b	Conservation areas on the Heritage at Risk Register	No conservation areas within the study area on the Heritage at Risk register.	HE – Heritage at Risk Register
Geology, Soils and Material Assets	14	**Protect and seek to enhance sites designated for their geological interest.**	a	Area measurement of nationally designated sites within the study area.	No reduction in the reported extent of nationally designated sites.	NE – condition monitoring
			b	Number of SSSI units with a 'favourable' condition.	No reduction in the number of SSSI units maintained in a favourable condition.	NE – condition monitoring

Abbreviations

AQMA	Air Quality Management Area
EA	Environment Agency
EH	English Heritage
DCLG	Department of Communities and Local Government
BWD	Bathing Water Directive
HAP	Habitat Action Plan
HER	Historic Environment Record
HRA	Habitat Regulations Assessment
LBAP	Local Biodiversity Action Plan
LNR	Local Nature Reserves
LWS	Local Wildlife Site
MMO	Marine Management Organisation
MA	Management Area
NCA	National Character Areas
NE	Natural England
MCZ	Marine Conservation Zone
NCC	Newcastle City Council
NTC	North Tyneside Council
ODPM	Office of the Deputy Prime Minister
PDZ	Policy Development Zone
PRoW	Public Rights of Way
SAC	Special Area of Conservation
SAM	Scheduled Ancient Monument
SEA	Strategic Environmental Assessment
SLCI	Site of Local Conservation Interest
SMP2	Shoreline Management Plan 2
SNCI	Site of Nature Conservation Interest
SPA	Special Protection Area
SSSI	Sites of Special Scientific Interest
UDP	Unitary Development Plan
UKBAP	United Kingdom Biodiversity Action Plan
VMNR	Voluntary Marine Nature Reserve

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Annex A
Relevant Legislation, Policy and Guidance

A.1 International and European Policy

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
EC Directive on the Assessment and Management of Flood Risks 2007/60/EC.	Member States are required to prepare plans to manage risks posed by floods and coastal erosion by 2015.	The SEA will consider the environmental effects of the Coastal Strategy on the environment.
The Ramsar Convention on Wetlands of International importance.	Requires appropriate measures to be taken to ensure the conservation of wetlands and waterfowl.	This SEA will consider the impacts of the Coastal Strategy on wetlands and wetland birds.
UN Framework Convention on Climate Change.	Objective is to achieve stabilisation in greenhouse gas concentrations.	The SEA will consider climatic effects within the development of the environment baseline.
EC Directive on the Conservation of Wild Birds 79/409/EEC (1979) "EU Birds Directive".	Member States have a duty to sustain populations of naturally occurring wild birds by sustaining areas of habitat in order to maintain populations at ecologically and scientifically sound levels. This applies to birds, their eggs, nests and habitats.	The SEA will consider the impacts of the Coastal Strategy on European Birds.
EC Directive on the Conservation of Natural Habitats of Wild Fauna and Flora 92/43/EEC (1992).	Member States are required to take legislative and administrative measures to maintain and restore natural habitats and wild species at a favourable conservation status in the community.	The SEA will take into account the conservation status of the study area and will seek to identify measures to further maintain and restore natural habitats.
The Convention on Biological Diversity. Rio de Janerio (1992).	Article 6A requires each Contracting Party to develop national strategies, plans or programmes from the conservation and sustainable use of biological diversity.	The SEA will consider biodiversity in accordance with guidance on this issue.
The Convention on the Conservation of Migratory Species of Wild Animals (Bonn convention).	Provides protection for endangered migratory species.	This SEA will consider the impacts on migratory (Appendix 1) species.
UNESCO Convention concerning the protection of World Cultural and Natural Heritage 1972.	Promotes integration of the protection of cultural and natural heritage in to planning.	This SEA will consider impacts on heritage and its setting.
United Nations Convention on law of the Sea (UNCLOS).	Sets out duties to protect archaeological and historical nature found in the sea.	The SEA will consider archaeological features in the development of the environmental baseline.

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
EU Biodiversity Strategy to 2020.	Full implementation of EU nature legislation to protect biodiversity, better protection for ecosystems and more use of green infrastructure, more sustainable agriculture and forestry, better management of fish stocks, tighter controls on invasive alien species, a bigger EU contribution to averting global biodiversity loss.	The SEA will consider biodiversity in the development of the environmental baseline.
EC Marine Strategy Framework Directive (2008/56/EEC).	Aims to achieve good environmental status of European marine waters by 2020.	The SEA will consider coastal water quality.
EC Water Framework Directive (200/60/EEC).	The WFD will help protect and enhance the quality of surface freshwater (including lakes, streams and rivers), groundwaters, groundwater dependant ecosystems, estuaries and coastal waters out to one mile from low-water.	The SEA will consider surface water quality in the development of the environmental baseline however requirements of the WFD will be principally dealt with in a separate WFD assessment.
EC Directive on Bathing Water (2006/7/EC).	Aims to serve, protect and improve the quality of the water environment and to protect human health.	The SEA will consider coastal water quality in the development of the environmental baseline and links to its importance for tourism and recreation.
EC Directive on Strategic Environmental Assessment 2001/42/EC.	For high level plans and strategies an SEA should be carried out in accordance with the approach described in the Directive.	This SEA will follow the legislation and guidance set out in the SEA directive.
Environmental Assessment of Plans and Programmes Regulations (2004).	These Regulations implement Directive 2001/42/EC of the European Parliament and Council on the assessment of the effects of certain plans and programmes on the environment as regards plans and programmes relating solely to any part of England.	The SEA is being undertaken in accordance with this European Directive.
EU Strategy on Climate Change.	Sets out steps to limit the effects of climate change.	The SEA will consider climatic effects in the development of the environmental baseline
EU Air Quality Directive (2008/50/EC).	Establishes targets for improving human health and environmental quality by 2020.	The SEA will consider air quality in the development of the environmental baseline.
Charter for the Protection and Management of Archaeological Heritage (1990).	The Charter states that policies for the protection of archaeological heritage should constitute an integral component of policies relating to land use, development, and planning as well as of cultural, environmental and educational policies.	The SEA will consider archaeological heritage in the development of the environmental baseline.
Convention for the Protection of Architectural Heritage of Europe.	The aim of this Convention is to protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study. Sources are considered to be elements of the archaeological	The SEA will consider archaeological heritage in the development of the environmental baseline.

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
	heritage all remains and objects and any other traces of mankind from past epochs, the preservation and study of which help to retrace the history of mankind and its relation with the natural environment.	
Mainstreaming Sustainable Development into EU Policies (2009).	The Renewed EU Sustainable Development Strategy (2006) deals in an integrated way with economic, environmental and social issues and lists seven key challenges: climate change and clean energy; sustainable transport; sustainable consumption and production; conservation and management of natural resources; public health; Social inclusion, demography and migration; and global poverty.	The SEA will consider climatic factors, conservation and the population in the development of the environmental baseline.
OECD Initiatives.	Requests member states to develop strategic planning and management of coastal zones	This SEA considers the management of coastal zones.

A.2 National Policy

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
UK Legislation and Guidance		
Flood and Water Management Act, 2010.	The Flood and Water Management Act takes forward some of the proposals identified in three previous strategy documents published by the Government; Future Water, Making Space for Water and the Government's response to Sir Michael Pitt's Review of the Summer 2007 floods. The Act provides for better, more comprehensive management of flood risk and promotes the importance of sustainable development for local authorities when exercising their flood and coastal erosion risk management functions.	An SEA objective is to ensure that that people and property are protected against coastal erosion and flood risk through the Strategies proposals.
The Marine and Coastal Access Act, 2009.	The Marine and Coastal Act put in place a variety of measures to improve the management and protection of marine and coastal environments including the creation of a competent marine planning authority (the Marine Management Organisation) to deliver marine licensing and enforcement of legislation. The Act also addresses the issue of coastal access, placing a duty on the Secretary of State and Natural England to secure a continuous, well signed and managed route around the English coastline.	The SEA will consider provision for the coastal path and also the candidate MCZ.
Environmental Protection Act 1990.	The Environmental Protection Act 1990 establishes in England, Scotland and Wales businesses' legal responsibilities for the duty of care for waste, contaminated land and statutory nuisance.	The SEA will consider impacts on contaminated land.

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
Coast Protection (Notices) (England) Regulations, 2002.	An Act to amend the law relating to the protection of the coast of Great Britain against erosion and encroachment by the sea.	The SEA will consider the law in relation to the protection of the coast line.
Wildlife and Countryside Act (1981) (as amended).	Addresses species protection and habitat loss by setting out the protection that is afforded to wild animals and plants in Britain and gives details of protection afforded to Sites of special Scientific Interest.	The SEA will consider the effects of the Coastal Strategy on wildlife.
The Conservation of Habitats and Species Regulations, 2012.	The objective of the Habitats Directive is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora.	The SEA will consider the effects of the Coastal Strategy on biodiversity.
The Conservation Regulations, 1994 (Habitats Regulations).	Transpose the requirements of the Habitats Directive building on existing legislation for the protection of species and habitats listed in the Directive.	The SEA will seek to identify measures to further maintain and restore natural habitats.
The Countryside Rights of Way Act, 2000.	The Act places a duty on Government Departments to make a definitive map of rights of way and to subsequently ensure their accessibility. It also requires improved access to open land and consideration if the affects of recreational users on nature conservation.	The SEA will consider the effects of the Coastal Strategy on Public Rights of Way and access to the coast.
Coast Protection Act, 1949.	Requires protection of the coast of Great Britain against erosion and encroachment by the sea.	This SEA considers coastal erosion and protection.
Natural Environment and Rural Communities Act, 2006.	The Act established and constituted Natural England and placed an obligation on public authorities to have regard for the conservation of biodiversity. Legislation also empowers the Secretary of State to publish lists of living organisms or habitats thought to be of key importance to the conservation of biodiversity in England and Wales.	The SEA will consider effects on sites designated for their ecological and geological interest (SSSIs).
Ancient Monuments and Archaeological Areas Act, 1979.	Requires provision for the investigation, preservation and recording of matters of archaeological or historical interest and for the regulation of operations or activities affecting them.	
Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact Within the Planning System (2005).	Sets out planning policies on protection of biodiversity and geological conservation through the planning system.	The SEA includes an objective to protect biodiversity and geological conservation.

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
National Planning Policy Framework (DCLG) Policy 8: Promoting healthy communities.	Sets out policies on the role of the planning system in facilitating social interaction and creating healthy, inclusive communities. It identifies the need for access to high quality open space as well as the protection and enhancement of public rights of way networks, including National Trails.	The SEA will consider impacts on the populations health with regard to the provision of coastal recreational resources and protection from flooding and coastal erosion risk.
National Planning Policy Framework (DCLG) Policy 10: Meeting the challenge of climate change.	Sets out the Government policy on development, flood risk and resilience to the impacts of climate change. It aims to ensure that proactive strategies to mitigate and adapt to climate change are adopted during the planning process and that the issues of flood risk and coastal change are taken account to avoid inappropriate development in areas of high risk.	An SEA objective is to ensure that vulnerability to the effects of climate change, such as sea level rise and flooding, is reduced through the Strategies proposals.
National Planning Policy Framework (DCLG) Policy 11: Conserving and enhancing natural environments.	Sets out policies on the protection and enhancement of biodiversity, valued landscapes and geological conservation interests in the planning system. The statement places an emphasis on the hierarchy of designated sites to ensure that protection is commensurate with their status.	The SEA will consider the effects of the Strategy on biodiversity and sites designated for their nature conservation interest.
National Planning Policy Framework (DCLG) Policy 12: Conserving and enhancing the historic environment.	Sets out policies to conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations.	The SEA will consider the effects of the Strategy on sites of historic and archaeological interest.
Circular 14/97: Planning and the Historic Environment Notification and Directions by the Secretary of State (1997).	The circular sets out requirements to notify and consult in reference to planning applications affecting the fabric or setting of listed buildings, conservation areas and historic parks and gardens.	The SEA will consider guidance on heritage and the historic environment.
Circular 02/93 - Public Rights of Way (1993).	This circular consolidates advice on recording, maintaining, protecting and modifying the rights of way network. It also outlines the powers which local authorities acquired under the Transport and Works Act 1992 to stop up or divert a footpath or bridleway in their area when it crosses a railway, otherwise than by a tunnel or bridge, where this is considered to be in the interests of public safety.	The SEA will consider guidance on Public Rights of Way.
Natural Environment White Paper 2012.	Recognises that a healthy, properly functioning natural environment is the foundation of sustained economic growth, prospering communities and personal well-being. It aims to mainstream the value of nature across society, including across government departments.	The SEA will consider population health and the opportunities to improve it through access to coastal recreational resources.

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
Plans, Programmes and Strategies		
National Flood and Coastal Erosion Risk Management Strategy for England (2011).	A national strategy which encourages more effective risk management, by enabling people, communities, business, infrastructure operators and the public sector to work together.	The SEA will consider the policies within the Strategy and identify any conflicts between this planning tool and the Coastal Strategy.
Appraisal of Flood and Coastal Risk Management (2009).	A Policy Statement which sets out the principles for guiding decision making on the sustainable management of flood and coastal erosion risk in England. The Statement identifies the need for structured and systematic appraisals to be carried out in order to justify expenditure on publicly funded projects and help to achieve better social and environmental outcomes as part of sustainable development.	The SEA will consider the policies within the Plan and identify any conflicts between this planning tool and the Coastal Strategy.
UK Biodiversity Action Plan.	The UK BAP aims to conserve and enhance biological diversity within the UK and increase priority habitats.	The SEA will consider biodiversity, will identify BAP habitat and, where practical, identify measures for meeting BAP targets.
Biodiversity 2020: A Strategy for England's Wildlife and Ecosystems (2011).	Builds on the white paper. The Strategy sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea. Water management includes habitats and species, through a river basin planning approach; and also promotes approaches to flood and erosion management which conserve the natural environment and improve biodiversity.	The SEA will consider the effects of the Strategy on biodiversity and sites designated for their nature conservation interest.

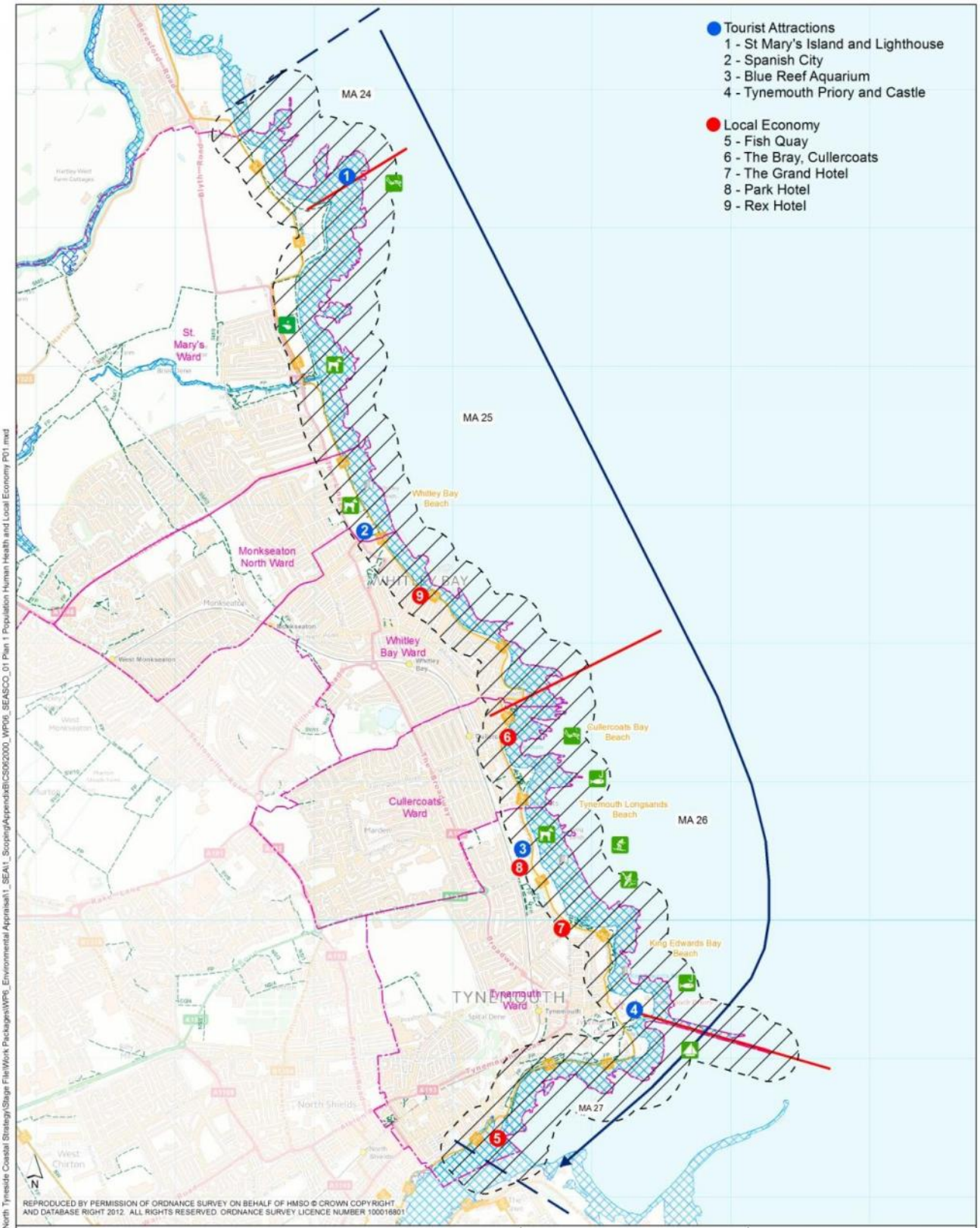
A.3 Regional and Local Management Plans

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
Northumberland and North Tyneside Shoreline Management Plan 2 (2009).	Shoreline Management Plans (SMPs) provide a large-scale assessment of the risks associated with coastal evolution and present a policy framework to address risks to people and the developed, historic and natural environment, in a sustainable manner. SMP2 sets out the results of the first revision to the original Shoreline Management Plan which covers a stretch of coastline extending from the Scottish Border south, to the River Tyne. It is a non-statutory document promoting policies for the management of risks from coastal erosion and sea flooding over the next 100 years. Policy Development Zone 6 (PDZ6) from Seaton Sluice to the River Tyne aligns with the stretch of coastline covered by this Coastal Strategy. Current policy along this stretch of coastline is to generally maintain protection to property and infrastructure against erosion and sea flooding where defences exist, whilst allowing the natural development of undefended sections.	SMP2 forms the basis for policy adopted in the Coastal Strategy. The SEA will review the policies set out in SMP2 and identify and conflicts between those policies identified in the Coastal Strategy.
North Tyneside Unitary Development Plan (2002).	Provides a statutory development plan for the borough. Adopted policies will continue to guide development until their eventual replacement by the Local Plan (expected November 2015). A principle concern of the plan is the protection and improvement of the physical environment.	The SEA will consider the policies within the Unitary Development Plan and identify any conflicts between this planning tool and the Coastal Strategy.
North Tyneside Local Plan (Consultation Draft 2015).	The Local Plan is a statutory document setting out policies for the development and use of land, providing the overall spatial vision for North Tyneside to 2030. Locally specific policies and proposals for key areas, notably the coast, are provided alongside borough wide policies guiding the scale, type and location of new development and investment. The Local Plan is currently at consultation draft stage with an anticipated adoption date of November 2015.	The SEA will consider the policies within the Local Development Plan and identify any conflicts between this planning tool and the Coastal Strategy.
North Tyneside Coastal Zone Strategic Framework and Masterplan (2011).	A document providing an overarching framework to guide tourism and culture led regeneration of the coastal area over 15 years. The framework brings together details of initiated and delivered projects as well as providing a structure for the co-ordinated delivery of new and complementary projects.	The SEA will consider the policies within the Framework and Masterplan and identify any conflicts between this planning tool and the Coastal Strategy.
North Tyneside Council Infrastructure Delivery Plan (Draft 2013).	The Council will work in partnership with the Environment Agency and NWL to prioritise sites for regeneration. The majority of the sites are coastal related and play a significant part in future regeneration proposals at the coast and safeguard the existing infrastructure behind the sea defences.	The SEA will consider the policies within the Infrastructure Delivery Plan and identify and conflicts between this planning tool and the Coastal Strategy.

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
North Tyneside Council's Climate Change Strategy (2010 -2015).	The Climate Change Strategy builds on the principles of sustainable development and puts into place an integrated approach in fulfilling the social, environmental and economic objectives within North Tyneside. Objectives include local dune management to counter both physical effects of the sea and winds and the trampling erosion caused by pedestrian access.	The SEA will consider the policies within the Strategy and identify any conflicts between this planning tool and the Coastal Strategy.
North Tyneside Draft Local Flood Risk Management Strategy (2014).	The Strategy ensures that flood risks from all sources, including surface run off, groundwater and ordinary watercourses, are identified and managed.	The SEA will consider the policies within the Strategy and identify any conflicts between this planning tool and the Coastal Strategy.
North Tyneside Surface Water Management Plan (2012).	A Surface Water Management Plan is a framework to help understand the causes of surface water flooding and agree a preferred strategy for the management of surface water flood risk.	The SEA will consider the policies within the plan and identify any conflicts between this planning tool and the Coastal Strategy.
Tyne River Basin Management Plan.	The RBMP for the Tyne River Basin District addresses the pressures facing the water environment and the actions required to protect and improve the water environment.	The SEA will consider the policies within the Plan and identify any conflicts between this planning tool and the Coastal Strategy.
Tyne Catchment Flood Management Plan (2009).	The CFMP set out policies for the sustainable management of flood risk across the catchment over the long term (50 to 100 years) taking climate change into account. The plan emphasises the role of the flood plain as an important asset for the management of flood risk, the crucial opportunities provided by new development and regeneration to manage risk, and the need to re-create river corridors so that rivers can flow and flood more naturally.	The SEA will consider the policies within the Plan and identify any conflicts between this planning tool and the Coastal Strategy.
Contaminated Land Strategy (Draft 2014).	The strategy describes the methodology used for the risk based inspection of the Borough and how the council will deal with contamination.	The SEA will consider any potential sites of contaminated land along the coastline.
North Tyneside Green Space Strategy (2008).	The Strategy considers all accessible green space in the borough including the coast which is identified as one of the most important areas of open space. It aims to provide green spaces which are attractive, safe and well managed as well as opportunities for enhancement or adaption ensuring equal access for all.	The SEA will consider the policies within the Strategy and identify any conflicts between this planning tool and the Coastal Strategy.

Name of document	Relevant policies/objectives of the plan or programme	How it will be considered in SEA
North Tyneside Green Infrastructure Strategy (2011).	Green Infrastructure should be incorporated within both the design and delivery of new land use schemes with developer contributions used to support the creation of sites and their maintenance. A need to develop places of interest within the network, for recreation and tourism, including the coastline. Use of GI assets to enhance biodiversity and green space activity.	The SEA will consider the policies within the Strategy and identify any conflicts between this planning tool and the Coastal Strategy.
Tynemouth Village Conservation Area Management Strategy (April 2014).	Adopted as a Supplementary Planning Document, the Strategy recognises Tynemouth Village for its major historic value and puts forward a plan for managing change and future development within the Conservation area. Enhancement opportunities identified include conservation, re-use and development of the Tynemouth Outdoor Pool (a fundamental part of the sea defence), a project to uncover the Lion's Head Fountain at Long Sands and the provision of suitable paths and walkways to encourage walking and cycling.	The SEA will consider Conservation Areas and the need to maintain and enhance the historic character of the area.
Newcastle and North Tyneside Biodiversity Action Plan (2008).	A ten year vision for the protection and enhancement of Biodiversity in Newcastle and North Tyneside. The plan aims to ensure that the natural environment is managed more effectively to protect natural resources and leave a legacy that will benefit present and future generations.	The SEA will consider local biodiversity by identifying BAP habitat and, where practical, identifying measures for meeting BAP targets.
North East Strategic Economic Plan (Draft Dec 2013).	The plan outlines how the North East Local Enterprise Partnership (LEP) area's economy will grow over the next 10 years with proposals for a 6 year programme of investment.	The SEA will consider the policies within the Economic Plan and identify any conflicts between this planning tool and the Coastal Strategy.

Annex B
Environmental Baseline Figures


Tourist Attractions
1 - St Mary's Island and Lighthouse
2 - Spanish City
3 - Blue Reef Aquarium
4 - Tynemouth Priory and Castle
Local Economy
5 - Fish Quay
6 - The Bray, Cullercoats
7 - The Grand Hotel
8 - Park Hotel
9 - Rex Hotel
MA 24
MA 25
MA 26
MA 27
St. Mary's Ward
Monkseaton North Ward
Whitley Bay Ward
Cullercoats Ward
Tynemouth Ward
Whitley Bay Beach
Cullercoats Bay Beach
Tynemouth Longsands Beach
King Edwards Bay Beach
WHITLEY BAY
TYNEMOUTH
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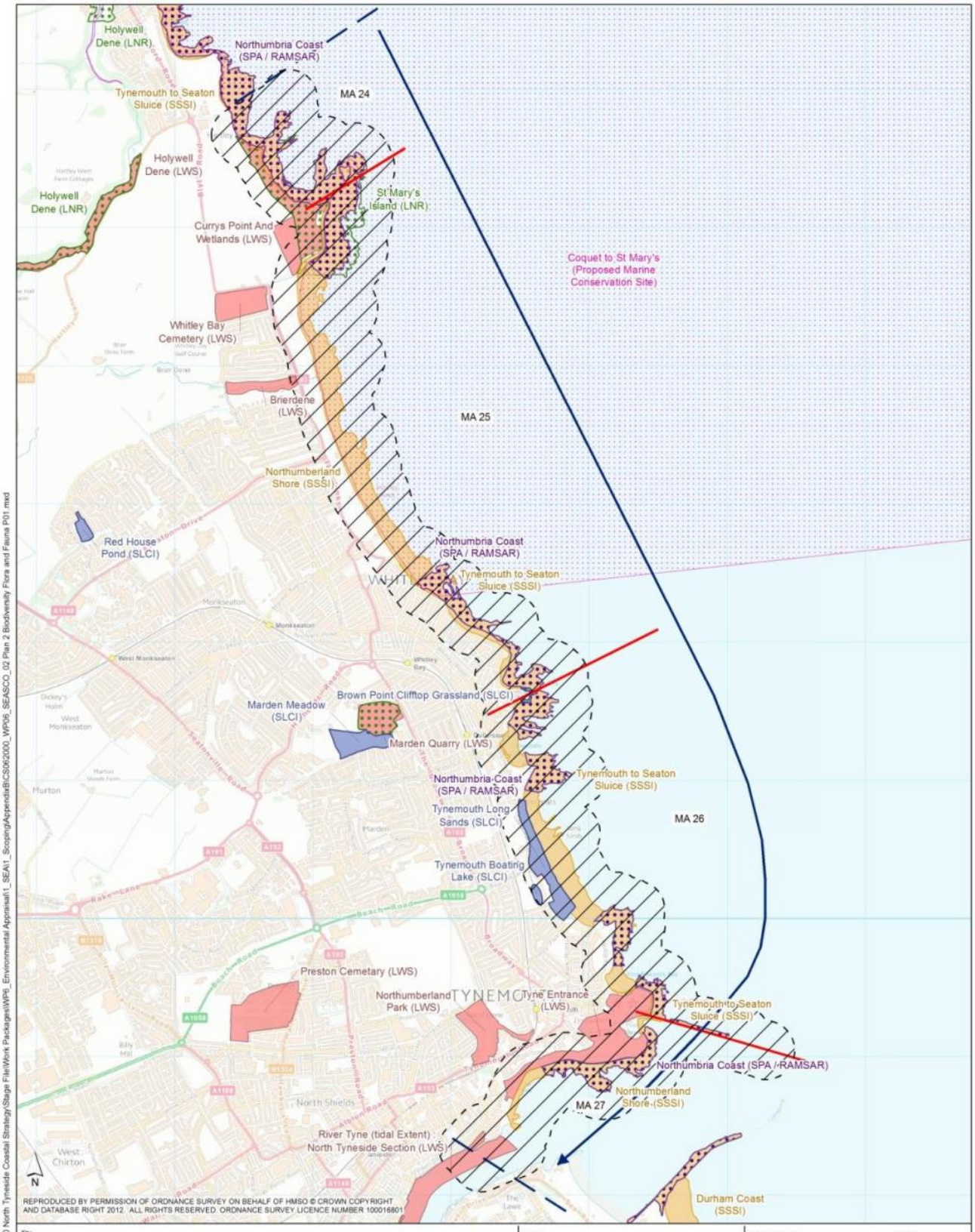
Key
200M BUFFER
WARD BOUNDARIES
NATIONAL CYCLE NETWORK
PUBLIC RIGHTS OF WAY (PROW)
EA FLOOD ZONE 3
EA FLOOD ZONE 2
BLUE FLAG BEACHES
SURFING
FISHING
SAILING
DIVING
GOLFING
DOG WALKING
CANOEING
Project
HARTLEY COVE TO THE RIVER TYNE COASTAL STRATEGY REVIEW SEA SCOPING REPORT
Drawing
PLAN 01
POPULATION, HUMAN HEALTH AND THE LOCAL ECONOMY
IMPORTANT SITES FOR HUMAN HEALTH AND THE LOCAL ECONOMY
Purpose of Issue
PRELIMINARY
Status
DRAFT
Scale @ A3
NTS
Drawn
KJ
Checked
JG
Approved
PW
Project No
CS/62000
Date
18/06/2014
Drawing Identifier
Project
WP06_SEA/SCO
Number
01
Revision
P01
Working in partnership with CAPITA
North Tyneside Council
Capita Property and Infrastructure Ltd - T:\CS\062000 North Tyneside Coastal Strategy\Stage File\Work Packages\WP6_Environmental Appraisal\1_SEA\1_Scoping\Appendix\BICS\062000_WP06_SEASCO_01 Plan 1 Population Human Health and Local Economy P01.mxd


Holywell Dene (LNR)
Northumbria Coast (SPA / RAMSAR)
Tynemouth to Seaton Sluice (SSSI)
MA 24
Holywell Dene (LWS)
Holywell Dene (LNR)
St Mary's Island (LNR)
Currys Point And Wetlands (LWS)
Coquet to St Mary's (Proposed Marine Conservation Site)
Whitley Bay Cemetery (LWS)
Brierdene (LWS)
MA 25
Northumberland Shore (SSSI)
Red House Pond (SLCI)
Northumbria Coast (SPA / RAMSAR)
Tynemouth to Seaton Sluice (SSSI)
Brown Point Clifftop Grassland (SLCI)
Marden Meadow (SLCI)
Marden Quarry (LWS)
Northumbria Coast (SPA / RAMSAR)
Tynemouth to Seaton Sluice (SSSI)
Tynemouth Long Sands (SLCI)
MA 26
Tynemouth Boating Lake (SLCI)
Preston Cemetary (LWS)
Northumberland Park (LWS)
Tyne Entrance (LWS)
Tynemouth to Seaton Sluice (SSSI)
Northumbria Coast (SPA / RAMSAR)
Northumberland Shore (SSSI)
MA 27
River Tyne (tidal Extent) North Tyneside Section (LWS)
Durham Coast (SSSI)
N
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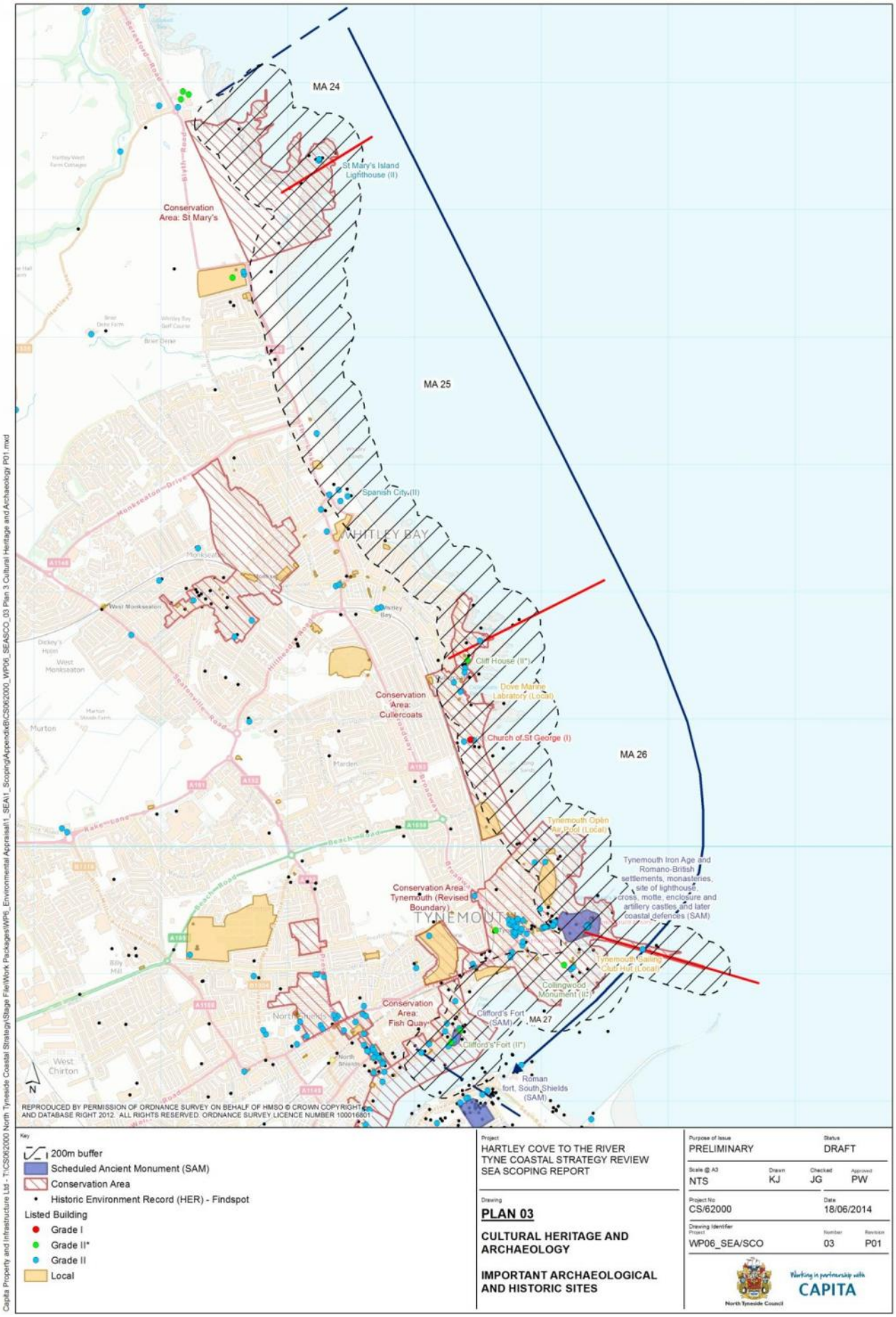
Key
200M BUFFER
SITES OF LOCAL CONSERVATION INTEREST (SLCI)
CANDIDATE MARINE CONSERVATION ZONE (MCZ)
SPECIAL PROTECTION AREA (SPA) / RAMSAR
SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
LOCAL NATURE RESERVE (LNR)
LOCAL WILDLIFE SITE (LWS)
Project
HARTLEY COVE TO THE RIVER TYNE COASTAL STRATEGY REVIEW SEA SCOPING REPORT
Drawing
PLAN 02
BIODIVERSITY, FLORA AND FAUNA
INTERNATIONAL, NATIONAL AND LOCAL NATURE CONSERVATION DESIGNATIONS
Purpose of Issue
PRELIMINARY
Status
DRAFT
Scale @ A3
NTS
Drawn
KJ
Checked
JG
Approved
PW
Project No
CS/62000
Date
18/06/2014
Drawing Identifier
Project
WP06_SEA/SCO
Number
02
Revision
P01
Working in partnership with CAPITA
North Tyneside Council
Capita Property and Infrastructure Ltd - T:\CS\62000 North Tyneside Coastal Strategy\Stage File\Work Packages\WP6_Environmental Appraisal\1_SEA\1_Scoping\AppendixB\CS062000_WP06_SEASCO_02 Plan 2 Biodiversity Flora and Fauna P01.mxd


MA 24
MA 25
MA 26
MA 27
St Mary's Island Lighthouse (II)
Conservation Area: St Mary's
Spanish City (II)
WHITLEY BAY
Cliff House (II*)
Dove Marine Laboratory (Local)
Conservation Area: Cullercoats
Church of St George (I)
Tynemouth Open Air Pool (Local)
Tynemouth Iron Age and Romano-British settlements, monasteries, site of lighthouse, cross, motte, enclosure and artillery castles and later coastal defences (SAM)
Conservation Area: Tynemouth (Revised Boundary)
TYNEMOUTH
Tynemouth Sailing Club HLF (Local)
Collingwood Monument (II)
Conservation Area: Fish Quay
Clifford's Fort (SAM)
Clifford's Fort (II*)
Roman fort, South Shields (SAM)
West Chirton
N
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Key
200m buffer
Scheduled Ancient Monument (SAM)
Conservation Area
Historic Environment Record (HER) - Findspot
Listed Building
Grade I
Grade II*
Grade II
Local
Project
HARTLEY COVE TO THE RIVER TYNE COASTAL STRATEGY REVIEW SEA SCOPING REPORT
Drawing
PLAN 03
CULTURAL HERITAGE AND ARCHAEOLOGY
IMPORTANT ARCHAEOLOGICAL AND HISTORIC SITES
Purpose of Issue
PRELIMINARY
Status
DRAFT
Scale @ A3
NTS
Drawn
KJ
Checked
JG
Approved
PW
Project No
CS/62000
Date
18/06/2014
Drawing Identifier
Project
WP06_SEA/SCO
Number
03
Revision
P01
Working in partnership with CAPITA
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Capita Property and Infrastructure Ltd - T:\CS\062000 North Tyneside Coastal Strategy\Stage File\Work Packages\WP6_Environmental Appraisal\1_SEA\1_Scoping\Appendix\B\CS062000_WP06_SEA\SCO_03 Plan 3 Cultural Heritage and Archaeology P01.mxd

Annex C
List of Consultees

C.1 Consultation Group One Members – Project Management

Name	Organisation
Peter Woods	Capita North Tyneside Council Partnership / North East Coastal Group
Mark Ellis	Capita Property and Infrastructure (Coastal Strategy)
Jane Tingay	Capita Property and Infrastructure (Coastal Strategy and WFD Assessment)
Katie Jackson	Capita Property and Infrastructure (SEA)
Hannah Carruthers	Capita Property and Infrastructure (HRA)
Steena Nasapen-Watson	Environment Agency (EA)
Colin Godfrey	Natural England (NE)
Alan Hunter	English Heritage (EH)
Emma Dixon-Lack	Marine Management Organisation (MMO)

C.2 Consultation Group Two Members – Authority Stakeholders

Name	Organisation
Jackie Hunter	Biodiversity Officer, North Tyneside Council
Graham Clarke	Public Rights of Way Officer, North Tyneside Council
Phil Scott	Head of Environment and Leisure, North Tyneside Council
Paul Buie	Head of Business and Economic Development, North Tyneside Council
Felicity Shoesmith	Manager for Engagement, North Tyneside Council
Niall Cathie	Client Manager Property, North Tyneside Council
Steve Bishop	Senior Manager Arts Tourism and Heritage, North Tyneside Council
Peter Slegg	Planning Officer, North Tyneside Council
Jackie Palmer	Planning Manager, North Tyneside Council
Marcus Jackson	Area Officer Seafront, North Tyneside Council
Mark Newlands	Client Manager Highways and Infrastructure, North Tyneside Council
Ian Lillie	Development Team Leader, North Tyneside Council
Frances Lowes	Senior Manager Regeneration, North Tyneside Council
Jacqueline Laughton	Strategic Manager Policy and Partnership, North Tyneside Council

Name	Organisation
Ian McCaffrey	Conservation Officer, North Tyneside Council
Paul Green	Senior Manager Strategic, North Tyneside Council
TBC	South Tyneside Council
TBC	Northumberland County Council
Cllr Sarah Day	Councillor, Tynemouth
Cllr Jean McLaughlin	Councillor, Tynemouth
Cllr David Lilly	Councillor, Tynemouth
Cllr Kenneth Barrie	Councillor, Cullercoats
Cllr George Westwater	Councillor, Cullercoats
Cllr Shirley Mortimer	Councillor, Cullercoats
Cllr Pamela Brooks	Councillor, Whitley Bay
Cllr John O'Shea	Councillor, Whitley Bay
Cllr Sandra Graham	Councillor, Whitley Bay
Cllr Judith Wallace	Councillor, St Mary's
Cllr Pam McIntyre	Councillor, St Mary's
Cllr Ed Hodson	Councillor, St Mary's
Cllr Brian Burdis	Northumbria Regional Flood and Coastal Committee
Cllr John Harrison	Lead Member for Environment
Cllr Norma Redfearn	Elected Mayor

C.3 Consultation Group Three Members – Interested Organisations

Organisation	Organisation
DEFRA	Northumbria Tourist Board
Department of Communities and Local Government	Panama Swimming Club
Department for Culture, Media and Sport	Sunderland Rambling Club
Department of Energy and Climate Change	Northumbria Ramblers
Department for Transport	Royal Northumberland Yacht Club
Port of Tyne Authority	Sport England North
Port of Blyth Authority	Sustrans
RLNI North East	Tynemouth Rowing Club
Country Landowners Association	Tynemouth Canoe Wave and Ski Club
The Crown Estate	Friends of Tynemouth Outdoor Pool
The National Trust	Sea Cadets

Organisation	Organisation
Lord Hastings Trustees	Tynemouth Village Society
The Northumberland Estates	BT Group PLC
Tynemouth Volunteer Life Brigade	Trinity House Lighthouse Service
Cullercoats Fishermen Association	The Maritime and Coastguard Agency
National Federation of Fishermen's Organisation	Northern Powergrid
North Eastern Inshore Fisheries and Conservation	Northumbrian Water
Northumberland Inshore Fisheries and Conservation Authority	Northern Gas Networks
Durham Wildlife Trust	Dove Marine Laboratory
Northumberland Wildlife Trust	University of Durham
RSPB	Newcastle University
Marine Conservation Society	University of Northumbria
Northumberland and Tyneside Bird Club	University of Sunderland
Council for the Protection of Rural England	Red Seal Rescue

Annex D
Public and Stakeholder Consultation Comments

D.1 Notification Letter and First Public Consultation Event

Comment	SEA Response
We are concerned to ensure that full account is taken of opportunities for the route of the England Coast Path along this section of the coast. Survey work is due to start 2014/5.	Access will be considered within the scope of the SEA along with requirements set out in the Marine and Coastal Access Act, 2009.
From a built heritage viewpoint there have been a number of significant changes along the coastline since 2007 including the designation of a new conservation area covering much of the coastline at Cullercoats. We have had a number of new listed buildings added in the period including the lighthouse and cottage and St Mary's Island. Our Local Register has been brought into being since 2007 also. This covers certain buildings and places with a coastal focus.	Conservation areas and listed buildings (including North Tyneside Council's Local Register) have been incorporated into the environmental baseline for the SEA.
North Tyneside's coast is one of the most popular places in the borough but is also one of the key regeneration areas of the borough. It is crucial that it needs to be managed so that in the future it is still a beautiful place to come and visit but also meeting the needs of visitors in the twenty-first century. The North Tyneside Local Plan is currently being prepared and contains coastal specific policies. The document has recently been subject to public consultation (November 2013) and can be found on the Council website. The North Tyneside Council Local Plan: Consultation draft (November 2013) was informed by a sustainability appraisal and habitat regulations assessment. We can provide the comments we received from the statutory consultees if that would be helpful? Prior to the Local Plan the Council was pursuing a Local development Framework composing of a Core Strategy and Area Action Plans. There was an Area Action Plan being prepared for the Coast and this along with associated documents can again be found on the Council website. There have been many regeneration projects over the years that I have listed below and should inform the Costal Strategy but I'm sure that colleagues in the regeneration team will provide further details if required. • Managing water recreation at the coast and the conflicts of jet skis and other users. Potential new launch ramp at the Haven, Tynemouth. • Regeneration of Tynemouth open air pool – many ideas discussed over the years but this is principally a key sea defence. • Enhancement of the wildlife habitat of the dunes at Longsands • New pier at Cullercoats harbour but continued recreational pressures	The Draft Local Plan and its policies will be considered within the scope of the Strategy and will be used to develop objectives for the SEA. Regeneration projects (ongoing and proposed) will be considered when developing management options. A representation from NTC's Regeneration Team has been added to the list of consultees and a copy of the SEA Scoping report and draft

Comment	SEA Response
• Spanish City refurbishment and regeneration, Watts slope cafe and toilets, potential land train serving Spanish City, promenade improvements and landscaping. • Rockcliffe promenade improvements. • Future use of the boatyard south of St Marys Island. • Recreation provision on the Links with it being designated as managed realignment. • Future recreational and tourism opportunities at St Marys Island/headland. • Enhancing the national cycle network running along the coast. I would be keen to be kept informed in the preparation of this document as I have worked on planning policy matters covering this area for a few years and have a keen interest in the coastal area.	Environmental Report will be distributed to them.
Environmental Issues Consideration of International and National designations along the coast and their associated legislation. For Example:- International Sites - Northumbria Coast Ramsar Site and Special Protection Area (SPA) – protected by the 'Conservation of Habitats and Species Regulations 2010' National Sites - Northumberland Shore Site of Special Scientific Interest (SSSI) and the Tynemouth to Seaton Sluice geological SSSI – protected under the Wildlife and Countryside Act 1981 (as amended) Ensuring that potential environmental issues along the coast/estuary are identified within the document, for example:- Impacts of coastal processes or projects on the geological features of the Tynemouth to Seaton Sluice SSSI or the habitats (rocky foreshore areas and high tide roosting habitats) used by the qualifying bird species of the Northumbria Coast SPA. Protection of the Dune system at Tynemouth Longsands (an important natural coastal defence) Erosion of boulder clay along the cliffs at the coast Loss of, or impacts on, intertidal habitats (mudlfats/saltmarsh) along coast/estuary Consideration of invasive species along the coast (in particular Japanese Knotweed) Links to Plans/Projects The following Council Plans and projects should be considered within the document:- Plans The Local Plan (& associated Area Action Plans) Newcastle & North Tyneside Biodiversity Action Plan (BAP) Coastal Regeneration Strategy Projects/Potential Projects Tynemouth Outdoor Pool	International, national and local nature conservation designations have been incorporated into the SEA environmental baseline. The SEA will include an assessment on the potential consequences of the management options proposed, including 'do nothing' and 'do something' scenarios. Impacts on designated sites will be considered in the SEA. The impacts of invasive species will be considered in detail at scheme/project level and do not fall within the scope of the SEA. A review of relevant policies and plans, including those listed, will be carried out during development of the SEA to ensure proposals conform. The Strategy will be updated to reflect schemes/projects already completed or proposed. The SEA will appraise only those projects which are to be completed.

Comment	SEA Response
Works to promenades (southern and central proms) Sand dune regeneration project (Tynemouth Longsands) Causeway at St Mary's Island Other Considerations Consideration needs to be given to the installation of groins at Whitley Bay beach to prevent the annual loss of sand form the beach due to the longshore drift under moderate to heavy sea conditions. Sand loss from the beach has been an increasing problem over the years since the old outfall pipes situated opposite Ocean View and Watts Slope were removed in 2006 after the new interceptor sewer works were completed. Consideration needs to given to works to prevent further damage in the future to the northern corner of the Haven beach during moderate to heavy south easterly sea conditions which are threatening Tynemouth Sailing clubs building, car park and beach access facilities.	Options will be considered as part of the Coastal Strategy's development. If an option to resolve this issue is shortlisted then the SEA will appraise the effects of this option on the environment.
It is a number of years since English Heritage commented on the Shoreline Management Plan for this area. Since then we have produced generic guidance which is available on-line. I would in the first instance direct you to this as a means of helping to ensure that the Strategy Review takes appropriate account of the historic environment. http://www.english-heritage.org.uk/content/publications/publicationsNew/guidelines-standards/coastal-defence-and-the-historic-environment/coastaldefenceeh.pdf Any examination of the Historic Environment Record for the area would show that along this stretch of coastline there are a number of designated heritage assets by, and with very close association with the sea. Foremost amongst these is the *Iron Age and Romano-British settlements, monasteries, site of lighthouse, cross, motte, enclosure and artillery castles and later coastal defences* on the headland at Tynemouth – a Scheduled Ancient Monument. Elsewhere can be found, amongst other assets, Cliff House – grade II* listed, Clifford's Fort – grade II* listed and a Scheduled Ancient Monument, and lighthouses, a radio station, lifeboat house, watch house, cottage and watch club house, and pier, all grade II listed. Not within the study area, but in close association to the north are WWI defences at Hartley – grade II* listed. Any Coastal Strategy should, in order for it to be sustainable (and to be in conformity with the National Planning Policy Framework) seek to avoid any unnecessary or unjustified loss of, or harm to, the significance and historic value of the heritage assets impacted upon by proposed actions – including their settings. In your consultation document you make reference to the intention to prepare a Strategic Environmental Assessment (SEA) of the Coastal Strategy. English Heritage has also produced guidance on the preparation of *SEA, sustainability appraisals and the historic environment*. It can be found at –	Best practice guidance will be referred to during the preparation of the Environmental Report. The SEA will consider international, national and local designations when developing the environmental baseline. Find-spots detailed within the HER will also be considered. Scheduled Ancient Monuments and Listed Buildings, including those highlighted will be referenced within the environmental baseline for the SEA. A review of relevant policies and plans, including those listed, will be carried out during development of the SEA to ensure proposals conform.

Comment	SEA Response
http://www.english-heritage.org.uk/content/publications/publicationsNew/guidelines-standards/strategic-environ-assessment-sustainability-appraisal-historic-environment/SA_SEA_final.pdf	Best practice guidance will be referred to during the SEA.
Having recently returned from a holiday in Australia I have been catching up with what has been happening back at home in Whitley Bay. On reading recent editions of the Whitley Bay Guardian I came across a Public Notice regarding the Coastal Strategy Review. The Public Notice invites me to contact you which is the purpose of this e-mail. I would very much like to contribute to this Review and be kept in touch with the processes and progress and in particular with regard to that section of coastline between St Marys Island and Cullercoats Bay. My interest in this project is because I live just off this section of coastline on Monkseaton Drive and between myself and my wife we walk this area almost every day and I feel we have a positive contribution to make to finding solutions to the problems. Over the last couple of years there has been an increase in the rate at which these 10m high boulder clay cliffs have been eroding to the extent that: 1. At the north end of the Whitley Bay beach, a gap caused by erosion has developed between the sea defence wall and its abutment to the boulder clay cliffs. There is a limited amount of work planned to relieve this particular state of affairs which is due to start here soon. However this work is only a temporary solution and will only tackle one small aspect of a much larger problem. Along this section of coastline the Briardene car park and the Links mini golf course are also under threat. 2. The edge of the boulder clay cliff is approximately five feet away from the north east corner of the Briar Dene car park and it and the rest of the east end of this park could fall away onto the beach at any time as there is a small stream running from under the car park down the cliff onto the beach (note: this water saturation of the cliff helps to fluidise the boulder clay speeding up its flow rate down onto the beach). 3. The whole of the eastern side of the mini golf course is being eroded away at a much faster rate than in previous years and soon there will have to be a course redesign to move the course tees away from the edge of the cliffs, or put out of commission altogether. 4. Along these cliffs there are a number of areas on the cliff slopes where Marsh Orchids have previously become established. These areas are fast disappearing as the rate of soil erosion is faster than the seeding and re-establishment of these orchid colonies.	The consultee has been added to Stakeholder Group Four. This has been highlighted as an issue. Recommendations for management will be put forward in the Strategy and options will be appraised through the SEA process. This has been highlighted as an issue. Recommendations for management will be put forward in the Strategy and options will be appraised through the SEA process. A review of baseline data and modelling when developing the Strategy will help to gain an understanding of current rates of

Comment	SEA Response
I believe this Coastal Strategy Review should also factor in future development opportunities for Whitley Bay as a seaside resort (European and/or commercial funding provision and/or investment) plus the general state of ugliness (and lack of maintenance) of the shoreline area. Other shoreline problems: 1. There is a large unused and dilapidated area of promenade in front of the High Point Hotel. 2. There has been a major build-up of rocks + shingle and loss of sand cover over the beach in the area between the skate park and the southern end of Whitley Bay beach. 3. There are derelict rooms/shop bays under the upper promenade in front of the Royal Hotel which I understand are to be filled in and the fronts grassed over(!!??). 4. The two long sections of promenade, one along the Whitley Bay sea front to the Briar Burn and the other from the north end of the Whitley Bay beach to St Marys Island, both have sections of ancient handrails which are corroding away such that they are most unsightly and are becoming a danger to anyone who might lean on them. There are part sections of these handrails in the St Marys Island section that have been renewed where cars have crashed through them. There has been no attempt to improve the outlook for visitors to the town. 5. There are three shelters on the promenade, two north and one south of the Rendezvous Café which are dilapidated and unsightly. 6. There are two long beach hut plinths on the promenade north of the Rendezvous Café which are dilapidated and unsightly. At the northern end of the Whitley Bay Promenade there is a concrete ramp down onto the beach and on its western side there is a high grass bank which leads along to the Briar Burn stream which runs across the beach to the sea. This high grass bank has been 'reinforced' along its base with large rocks which have been in place for as long as I can remember. This section of grass bank, presumably part of the original boulder clay cliff, has not suffered any measurable erosion that I am aware of whilst I have lived here (about 40 years). Recent improvements to the South Shields promenade area show what can be done with a proper application to appropriate design and locating funding opportunities. Why can this not be done for North Tyneside? Solutions to the problems: For points 1 to 3 -- The boulder clay cliffs need to be protected by either: a) Extending the present Whitley Bay promenade (maybe not quite as wide as the present one) northwards to meet up with the sea wall at the north end of the beach. or	erosion, including past and future trends. Recommendations for management will be put forward on this basis and the SEA will appraise any effects of options on the environement. The presence of international and national protected habitats and species will be incorporated into the SEA's environmental baseline where existing data supports their existence. Locally important species and habitats as identified in the LBAP will also be considered. Proposals for the central promenade were put forward in the last Coastal Strategy document and have been taken forward as a project to be implemented in 2014/15. The Coastal Strategy will appraise a range of options to

Comment	SEA Response
b) Installing a rock protection shield along and up the base of the boulder clay cliff similar to that installed on the grass bank by the west side of the promenade ramp onto the beach. It is important for Whitley Bay as a holiday destination to have its adjacent coastline, as its main attraction, in a fit state to attract both day visitors and those wishing to stay for longer. At the present time the state of this coastline, particularly that section between the Briar Burn outflow to the sea and the northern end of the beach is in danger of being continually eroded away, destroying the viability of the mini golf course amongst many other considerations. We are told that there has never been sufficient funds available locally to address this problem in any fashion. I am sure there must be some available funding 'out there' to protect these cliffs coupled with improving the outlook for the promenade and beach which would revive Whitley Bay's prospects of becoming a successful holiday destination again. The funds could/should come from Central Government funding for seaside resorts, Northumbrian Water, European grants, coastal protection grants and the lottery fund to name but a few sources. One further requirement for Whitley Bay to become the successful holiday destination again is for the beach in front of the promenade to be in a presentable state. This is not so at present as the most important stretch of the beach between the skate park and the beach's southern end is piled high with rocks and shingle and visitors are not be able to use this area to sit on. These heaps of rocks and shingle are too high for any depth of sand to accumulate there. If these rocks and shingle were to be removed and replaced with sand then a major advantage would be gained for the town. I trust that an acceptable solution can be found that will address the ever faster erosion of our boulder clay cliffs and that this solution could be part of a wider goal of improving Whitley Bay's prospects as a visitor destination.	ensure that the most cost effective, socially and environmentally acceptable methods for managing risk are put forward. The SEA will appraise the effects of options on the environment. The Coastal Strategy will consider opportunities for partnership funding and grants.
Will you please note that we would like to be involved and consulted with regard to all proposals for improvement plans for the Tynemouth Haven area. We, along with the Sailing Club,Sea Scouts and Red Seal Rescue groups have previously been involved in discussions with NTC about proposals for the Haven area and we request that this continues in the future.	The consultee has been added to Stakeholder Group Three and will be consulted during development of the Strategy. All consultees noted have been added to Stakeholder Group Three.
I can confirm that Natural England has no detailed comments to make at this stage but welcomes the objective of the Review to produce a strategy and proposed programme of work in which '*The integrity and coherence of the environmentally protected sites will be ensured*' and the intention to undertake a SEA, HRA and WFD Assessment. We would however wish to provide further comment/input as the options are progressed.	The consultee has been added to Stakeholder Group One and will be consulted during development of the Strategy.

Comment	SEA Response
For further information on statutory sites for nature conservation which may be relevant to the Strategy we recommend that you look on the website Nature on the Map (www.natureonthemap.org.uk). This site enables web users to search for information about English wildlife sites and habitats on an interactive map. You might also find it helpful to look at the Multi-Agency Geographic Information for the Countryside (MAGIC) Project website (http://magic.defra.gov.uk/), which collates information from Defra, Natural England, Environment Agency, Forestry Commission and English Heritage. Natural England's website, www.naturalengland.org.uk, also provides information on SSSIs that can be downloaded. The following provides a link to relevant European Site conservation objectives (http://www.naturalengland.org.uk/ourwork/conservation/designations/sac/northeast.aspx).	International, national and local environmental conservation designations have been incorporated into the SEA environmental baseline.
Low level of sand at front of Bray No protection from North Pier Raise level of Bray offrose 1.6m Cellar Flooded Dove Marine MMO European Fisheries Grant for harbour improvement Rock armour to pier too close – move forward Sand in harbour South Pier is excessive no toe on pier?	The Coastal Strategy will appraise a range of options to ensure that the most cost effective, socially and environmentally acceptable methods for managing risk are put forward. The SEA will appraise the effects of these options on the environment. The Coastal Strategy will consider opportunities for partnership funding and grants.
We would like to see some improvements made at Cullercoats harbour for the boat standage area on the north side (The Brae) If not possible in this scheme, we would like it considered in the future. Risk of flooding and damage to the boats that have to lie there in bad weather.	The Coastal Strategy will appraise a range of options to ensure that the most cost effective, socially and environmentally acceptable methods for managing risk are put forward. The SEA will appraise the effects of these options on the environment.
Needs to be enhanced, protected. It's what the public come and envy – look at South Tyneside. We also must protect a coastline, which we love.	The Coastal Strategy will appraise a range of options to ensure that the most cost effective, socially and environmentally acceptable methods for managing risk are put forward. The SEA will appraise the effects of these options on the environment.

Comment	SEA Response
The Strategy is important and needs to be publicised, and to keep residents in the picture. I am very interested in the proposals.	A report outlining the consultation approach to be adopted during development of the Strategy has been produced.
All as expected as per the SPM2. Comments as follows: • Monitoring of Erosion – Data could be made more public and public data gathering could assist i.e.: photo logging. • Environmental data – Big Sea Project based at Dove Marine has used Citizen Science to gather data and for ongoing monitoring – it resides at NE Env. Records Centre (Eric NE) • Beach Cleaning 1. Removes dune building materials 2. Is it consented – it removes food for coastal birds – the feature for which the area is designated 3. Selective litter removal (seasonal) could reduce the need for expensive dune restoration • Invasive Species – Japanese knotweed is established and spreading • Urgent imperative to prevent development on undefended coast ie: W Bay mini golf • What is sediment input from River Tyne? • CSO'S – Those that flow to 1. Brierdene 2. Small stream to north of St Mary's actually input significant sewage waste into the coast. Brierdene was in WFD and has been removed by EA despite failing due to heavy pollution from former mine workings /agriculture/CSO's. • Archaeology – erosion is impacting on this especially regards WW2 features (Rapid Assessment undertaken by English Heritage) • Data missing = 1. Coquet to St Mary's is a proposed Marine Conservation Zone (as such covered as pEMS therefore Habs Directive) 2. River Tyne is Local Wildlife Site 3. Data at ERIC NE (Hancock Museum) Tynemouth Cliffs – impact area for breeding Kittiwakes – a key BAP species Any reclamation should enhance biodiversity No repeat of dreadful works done @ Cullercoats harbour	The impacts of invasive species will be considered in detail at scheme/project level and do not fall within the scope of the SEA. An objective of the SEA will be to ensure that any options proposed will minimise pollution to surface and coastal waters and ensure water quality targets are not compromised. The proposed MCZ from Coquet to St Mary's, LBAP species/habitats and Local Wildlife sites will be incorporated into the SEA environmental baseline.
Would like to see renovation (NOT DEMOLITION!) of Tynemouth outdoor pool.	Regeneration projects (ongoing and proposed) will be considered when developing management options. The SEA will appraise the environmental effects of these options.
What about the coast and why spend money on it. Leave it wild for more adventure at coast.	The Coastal Strategy will appraise a range of options to

Comment	SEA Response
Maybe free car parking for holiday visitors? – a little more access over looking wild areas for disabled etc – Montersign Beach Building	ensure that the most cost effective, socially and environmentally acceptable methods for managing risk are put forward. The SEA will appraise the environmental effects of these options.
Access at Southern Promenade should be maintained to allow fishermen to access the foreshore. Sand on Whitley Sands low - affected by building of Trinity Road. Sands in Cullercoats Harbour very high – never been seen before. Need more maintenance of all coastal structures Reinstatement of groynes on Whitley Sands (Pipes).	Access will be considered within the scope of the SEA for a range of user groups including fishermen. An objective of the SEA is to ensure options recognise and support the role of the fishing industry.
I would just like to ensure the Port of Tyne are involved with any reviews.	The consultee has been added to Stakeholder Group Three.
Cullercoats Harbour – "The Brae" – the hard standing next to the RLNI Lifeboat House is in serious need of upgrading just to "hold the line". During periods of bad weather, commercial fishing boats have for centuries been hauled up onto the Brae for safety. The Brae is now becoming increasingly unsafe due to its very low height and construction. It is awash during spring tides and heavy seas more and more frequently. Every time these events combine, the fishing boats have to be moved off the Brae and up the steep bank onto the main road, and when caught out there have been many incidents of severe damage to boats and equipment. The hassle and effort involved in having to haul these heavy boats up and down, to and from the boat park is enormous and completely unnecessary. The treat to safety of the boats is growing steadily due to the increasing frequency of tidal surges, extreme weather patterns and rising sea levels. Cullercoats Fishermen Association has for over 30 years repeatedly asked North Tyneside Council to resolve this problem and have also provided information on available grant assistance, all to no avail. Sea conditions can and do change suddenly, unexpectedly and there have been many instances of boats, on their trailers, being trapped on the Brae and unable to be moved at high water during heavy seas and spring tides and have then had to be anchored by ropes and chains to tractors to avoid being wrecked. The slipways and Brae in Cullercoats were not entered for consideration into the SMP2 consultation by North Tyneside Council prior to 2009 (MU 47-P26-PU26.2) although all other Councils had mentioned the need to protect their launching, boat storage and berthing facilities on their own coastlines. There have been no improvements to safety and operational facilities in Cullercoats for over 60 years!	A review of baseline data and modelling will help to gain an understanding of the risks, including past and future trends. Recommendations for management will be put forward on this basis. An objective of the SEA is to ensure options recognise and support the role of the fishing industry.

Comment	SEA Response
Please bear in mind that the RNLI Lifeboat House is considered at risk and therefore is notified by the Environment Agency when flooding is imminent, and that the Brae is even lower than the Lifeboat House! Can you please refer, for more details, to the information supplied by Cullercoats Fishermens Association at the Coastal Strategy Review Presentation of 16.4.14 held in Tynemouth Village. Our film evidence of the tidal surge of 5.12.13 in relatively calm conditions, is in the possession of Jane Allison of NTC Regeneration Team. The "European Fisheries Fund" grants information we supplied, we think, will have from this or next year, the title chnges to the "European Maritime Fisheries Fund". The MMO should be able to provide details. Could you please supply names and contact details of your officers who were present on 16.4.14 for future correspondence. We hope and pray this time our requests will be acted upon to sustain the safety and viability of the fishing fleet and the long historic heritage of fishing in Cullercoats. We look forward to your reply.	
Cullercoats Harbour needs sea defences from the rising spring tides and big seas that pound the harbour. We need the Brae raised and levelled for safety, to manoeuvre our fishing boats and protect them from worsening weather conditions and rising sea levels. 1. Extend slipway by Dove Marine 2. CCTV required (vandals and weather) 3. Parapet wall around Brae required Approx 60 years since the last improvements. Cullercoats Fisherman's Association has requested for over 30 years to improve defences.	The Coastal Strategy will appraise a range of options to ensure that the most cost effective, socially and environmentally acceptable methods for managing risk are put forward. The SEA will appraise the environmental effects of these options. An objective of the SEA is to ensure options recognise and support the role of the fishing industry.
Brae awash in big seas and tides. Damage to boats in past. Sea levels rising. Parapet wall around Brae required. Around Dove Marine extend slipway. Someone to turn up at meeting not like Marcus Johnson who did not turn up but Councillors did. CCTV required. 60 years since last improvements. Steps bust bearing etc on tractor wheels etc,	A review of baseline data and modelling will help to gain an understanding of the risks, including past and future trends. Recommendations for management will be put forward on this basis. An objective of the SEA is to ensure options recognise and support the role of the fishing industry.
The Brae should be raised to the 2nd level. Big tides to keep the boats safe. Avoiding the boats to be hauled up to boat park and disrupting traffic in doing so. The slip way next to Dove Marine to be levelled at the bottom, big drop when sands shift.	An objective of the SEA is to ensure options recognise and support the role of the fishing industry.

Comment	SEA Response
Install CCTV to protect boats and RNLI Station against vandals. Over the years there has been very little done to protect the fishing boats that are left at the harbour.	
When planning Strategy regarding Cullercoates Harbor it must be remembered that Cullercoats Harboir is a working harbour used by Fishermen who work in harmony with holiday makers but use the harbour 12 months of the year. They require access to the beach and moorings and hard stand adjacent to the Lifeboat House. This must be taken into consideration. In the past the Council have treated fishermen (from the Village) as if they don't exist. Also Cullercoats Harbour is not a safe place for launching. Skijets damage has been done to fishing boats on the moorings and near accidents with swimming youngsters. Steps should be taken to ban them before a serious accident occurs and someone is badly injured or worse still killed.	The Strategy will endeavour to take all stakeholder views into account through a robust consultation methodology. An objective of the SEA is to ensure options recognise and support the role of the fishing industry.
In relation to your partnership working Capita and NTC, regarding the Coast Strategy Hartley Cove to the River Tyne I would like to submit the following points:- • It is now some 60 years since any safety improvements have been made to the Harbour. This is a working harbour and these are business operating from this harbour. Cullercoats Fishermens Association have requested various improvements for the safety of the fishermen and the knock on effect that this will have to all harbour users for over 30 years. All to no avail. • The brae at Cullercoats should be levelled. At present damage is caused to the tractors, the boats and their trailers/wheels when having to manoeuvre up and down the brae. • There should be a parapet wall added to deflect the force of the waves and seas. • The slip which runs across the entrance to the Dove Marine Laboratory should be extended – at present this comes to an abrupt stop and there is a considerable drop – again causing damage to boats/wheels and tractors. • There has been considerable vandalism caused to boats/tractors/wheels when parked on the braw. There has also been considerable and repeated vandalism done to the Dove Marine Laboratory and RNLI Lifeboat house. The only way to deter or detect the people who carry this out is to install CCTV which must be monitored by the Gatehouse at NTC. Much of this damage is caused because they are down the hill and out of sight of any passing police or locals who may report the damage. The police have been called on numerous occasions. • The changes in weather/seas/tides means that the boats are not safe to be left on the brae as it is. In particularly bad weather the boats have to	An objective of the SEA is to ensure options recognise and support the role of the fishing industry.

Comment	SEA Response
be taken up the hill to the boat park. This is becoming a more frequent requirement. • These fishermen need their livelihoods preserved.	
Re Works at Cullercoats Harbour The following points should be noted when considering the Coastal Strategy Hartley Cove to the River Tyne:- • The brae at Cullercoats should be levelled to improve the safety for the fishermen and their boats • This will help to compensate for the rising tides, worsening weather conditions, big seas/storm surges/spring tides. • Boats have to be moved up to the boat park in bad weather conditions. • The slip way at the Dove Marine Laboratory needs to be extended as there is a considerable 'drop'. • It is over 60 years since any improvements have been made and Cullercoats Fishermens Association have been asking for improvements for over 30 years.	An objective of the SEA is to ensure options recognise and support the role of the fishing industry.
As a full time working fisherman from Cullercoats Harbour for thirty odd years, over the last ten years or so there has been concern over rising sea levels spring tides, it badly needs lifting. The steps have always been a big problem for the trailers and tractors turning, the brae being levelled would mean better and safer hauling up of the boats, with more room for another couple of boats. We've been trying for a long time to try and get CCTV installed down the harbour which would be a benefit for everybody down there RLNI, Dove Marine, and ourselves. The Cullercoats Fishermans Association have been asking for these improvements for many years.	An objective of the SEA is to ensure options recognise and support the role of the fishing industry.
Brae is awash in big seas and spring tides – needs levelling off – steps of brae damage bearings on tractor wheels and trailer wheels. There has been a lot of damage to boats by vandals over a lot of years, costing fishermen for repairs. CCVT footage would be of great use for RNLI, fisherman, Dove Marine Lab and icecream hut etc. If brae was levelled off boats would not have to be hauled up to boat park in bad weather conditions, also a parapet wall around brae would be of good use. It is approx 60 years since any improvements were made, the CFA have been asking for improvements for over 30 years. An extended slipway by Dove Marine would be useful	An objective of the SEA is to ensure options recognise and support the role of the fishing industry.
Would like to see present sea defences held and improvements made to recreation (sea sports) helping tourism and the economy through specific initiatives – that help these aims in addition to sea defences e.g swimming pool, selected access points for sailing boats e.g. Haven , and surfing e.g. Black Middens, River Tyne and Hartley Cove, as well as surfing/RLNI centre, Long Sands	The Strategy will take into account the social, environmental and economic components of sustainability. The impacts on access and recreation will be considered within the scope of the Strategy (as part of the SEA) along with any relevant plans and programmes which set adopted policies for the coastal area.

Comment	SEA Response
The main issues are the landslip under the Priory (KE Bay side) which needs reinforcing where necessary, preserving the existing 'supports' at KE Bay (landslip from 1910!) and under the priory headland and the pool. TCAMS contains proposals for the pool areas – these depend on funding of course, but a lido-type thing must be appropriate, and either a pool or a flattened area for other activities. The principles about providing support could apply on other parts of the coastal strip, but I am less familiar with those.	This has been highlighted as an issue. Recommendations for management will be put forward in the Strategy. The SEA will appraise the effects of these options on the environment. The Coastal Strategy will consider opportunities for partnership funding and grants.
As a resident of Tynemouth and a member of the Friends of Tynemouth Outdoor Pool I am concerned that the Strategy supports the refurbishment and re-opening of the outdoor pool. This proposal not only maintains the pools existing function as a sea defence but aims to provide a sustainable community resource, transforming the existing eyesore!	Regeneration projects (ongoing and proposed) will be considered when developing management options.
I welcome the opportunity to express my views and comments as follows. I have been a working commercial fisherman on this stretch of coast for some 45 years and feel well qualified to make recommendations. Firstly being a descendant of the fishing community of old Cullercoats it saddens me greatly to see how the needs of fishermen have been ignored for many decades. While it appears that Cullercoats is now in the last throes of its former fishing glory I can tell you that many Cullercoats fishermen work from nearby deep water harbours Tyne/Blyth and at any one time we all decide to base at Cullercoats this just simply would be impossible for the simple fact that our amenities have been lost to such an extent that no more than 3 boats could now operate because of the stepping of the North Brae. It would not only be impractical but dangerous for any more to try and negotiate the obstacles of stepping. These steps were put in there initially without question to deter the fishermen from using their traditional boat apron. I personally worked my boat from Cullercoats for some years during the 70s + 80s and after one near disaster on the steps with our tractor I decided to abandon my village. I personally met with Council officials of that time who were without any sympathy for our traditional rights which were forwarded to us by the Duke of Northumberland when he sold the Harbour and surrounds to Tynemouth Borough Council. There has been a most recent battle for those left fishing there that sums it all up, the Council wanted to place more restrictions on the fisherman's Brae that would have effectively reduced the maximum fishing effort to 2 boats!! Allow the fishing heritage to flourish again in Cullercoats, flatten the Brae and restore our rights as the Dukes Charter* intended. *Dukes Charter is available to be viewed. The Charter was drawn up by the point of sale by the Due to TBC. (See attached photo of our harbour 'as it was')	An objective of the SEA is to ensure options recognise and support the role of the fishing industry.
I supplement my husband's concerns by saying the Brae needs flattening and raising to take into account rising water levels, allow a fishing fleet again to exist, damage to boat carriages and tractors, safety and above all to restore our	An objective of the SEA is to ensure options recognise and

Comment	SEA Response
harbour back to being fishing friendly. Our Fishermen's Association have tried for 30 years for this restoration. It is 60 years+ since the then Tynemouth Borough Council made the Brae stepped to deter the fishing.	support the role of the fishing industry.

D.2 Stakeholder Inception Workshop

Comment	Response
Friends of Tynemouth Outdoor Pool have had preferred developer status for the past year. The EIA is still ongoing but currently there is very little activity from them possibly due to lack of funding.	Project team to take into account these proposals when preparing the Strategy's options and NTC regeneration team to keep the project team up to date with any progress made.
Central Promenade is progressing – currently at design stage with construction expected April 2015.	Project team to take into account when preparing the Strategy's options.
Southern Promenade has partially failed and will be progressed through emergency funding from the Environment Agency.	Project team to take into account when preparing the Strategy's options.
Coastal Strategy options are likely to mirror those set out in the SMP2.	Project team will reassess the management options however initial assessments indicate that the overall policy for each management area is unlikely to change from SMP2.
Erosion rates are to be included in the strategy documentation as this is useful for NTC to show the public when issues arise.	To include within the scope of the Strategy.
Confirmed that the review will include an assessment of current defences with estimate costs for any works.	To include within the scope of the Strategy.
Where local issues are raised it would be useful to forward this information to the regeneration team. Similarly they will provide any information they have collected.	Project team will provide an update in the form of the consultation report.
EH advised that any cultural asset including the outdoor pool was to be considered in baseline assessment in the SEA and that the scale of significance must be clearly defined.	The SEA scoping report will include key undesignated heritage assets in its environmental baseline
It is important to manage the expectations of the public from an early stage. Set out what we will and will not be considering and why.	The project team will respond to all comments within the consultation report. Where issues have not been taken forward a reason for not doing so will be provided.
Issues remain over the fishermen's comments regarding the brae. If this is not going to be considered there has to be a reason why.	The project team will consider this issue further to determine whether it falls within the scope of the Strategy.

Comment	Response
The sewage outfalls commented in the photo were removed in 1995. It is felt that these outfalls provide stability to the sediment on Whitley Bay. The council feels that there is an opportunity for groyne protection.	The project team will consider this option when developing the Strategy.
Funding was seen as a major risk to the strategy and there was a need to look at other funding streams not just the EA and be a bit more creative around funding of the projects.	More 'creative' funding solutions will be considered by the project team.
Natural England said that there is currently a proposal under consultation to create a marine Conservation Zone between Coquet Island and St Mary's Island, Whitley Bay.	The proposed MCZ will be detailed in the SEA scoping report environmental baseline.
Masterplan for development of Whitley Bay indicates that the biggest issue along the coast is the public access to the coast. This has been a historical issue.	The current provision for access and recreation will be considered within the environmental baseline. Any options proposed will be assessed against objectives for access and recreation to ensure there are no detrimental impacts.
Funding of potential schemes was seen as a major problem and it was suggested that the programme of potential schemes should extend further into the future to give potential funders more time to incorporate the preferred options into their plans.	The project team will consider this issue further when developing the programme of potential schemes.
The small boatyard located on north Whitley Sands is in an area of no active intervention. It has been repaired in recent years but as erosion takes place this is not sustainable (and contrary to the current policy).	The project team will discuss this issue further with NTC Property team.
There is a need to look at other options for limiting erosion, for example by tackling drainage problems on the Links.	The project team will consider this during the options development stage.
Website to be made available and to include draft documents for consultation.	A page on NTCs website will be used to host information and documents in relation to the Strategy.

D.3 Stakeholder Inception Workshop

Comment	Response
I believe that the following sections should be maintained: 4,5,7,9,11,15 Are there no plans for the Spanish Battery (Freestone Point)? I would like to be kept informed of progress.	A review of baseline data and modelling will help to gain an understanding of the risks, including past and future trends. Recommendations for

Comment	Response
	management will be put forward on this basis. The consultee has been added to Stakeholder Group Four.
Joining up the north promenade with the sea wall south from St Mary's lighthouse would be an obvious solution to the erosion of the golf course which will continue until more land is cost. It would also provide an attraction for walkers in the same way that the riverside walk from North Shields to Tynemouth does. When the sea wall was constructed from St Mary's Island that was regarded as phase one. Phase two was filling the gap down to the North promenade.	A review of baseline data and modelling will help to gain an understanding of the risks, including past and future trends. Recommendations for management will be put forward on this basis Access will be considered within the scope of the Strategy.
Could you please make arrangements to provide Councillor Harrison with a hard copy of the strategy	A hard copy of the draft and final Strategy document will be made available for viewing at North Tyneside Councils Silverlink offices.

D.4 Scoping Report Consultation Exercise

The following responses were received from stakeholders during the SEA Scoping consultation exercise:

- North Tyneside Council Planning Team – 8th July 2014
- Natural England – 30th July 2014
- Marine Management Organisation – 22nd July 2014
- English Heritage – 29th July 2014
- Cullercoats Fishermen's Association – 29th July 2014

Planning
First Floor Left
North Tyneside Council
Quadrant
The Silverlink North
Cobalt Business Park
North Tyneside
NE27 0BY

Our Ref:
Your Ref:

Date: 8th July 2014

This matter is being dealt with by:
Peter Slegg
Tel: (0191) 643 6308
Peter.slegg@northtyneside.gov.uk

Dear Katie Jackson

Hartley Cove to the River Tyne Coastal Strategy - Strategic Environmental Assessment Scoping Report Consultation

We welcome the opportunity to comment on the consultation of the above and the invitation to the inception meeting on 5th June 2014. The comments that we have made below are the views of officers within the Planning policy team of Capita who are working on behalf of North Tyneside Council and should not be considered as an official Council position.

We look forward to the updated Coastal Strategy for North Tyneside that will form part of the evidence in the production of the North Tyneside Local Plan. We support the approach to undertake a Strategic Environmental Assessment (SEA) Scoping report to consider the environmental implications of the Strategy at this stage.

The following comments are detailed to specific elements of the scoping report but of the nine themes identified it is suggested that Local Economy could be considered on its own to reflect its importance in the area and differentiate between the different elements of local economy that are disaggregated later on e.g. fishing related industry and tourism industry. There are also some themes that are not mentioned on the list that should be included. Transport is a keen theme for the coast with the public highway often being a predominant land use along the coast. There are also car

parking facilities that immediately abut the sea defences that would be impacted on every future implications to works to the sea defences or not.

I hope you find the following set of comments constructive.

- 2.2.1 NPPF sets out the policies but I think that these should be referred to as chapters rather than policies. It is also probably worth making reference to the first 'chapter' Achieving Sustainable Development.
- 2.2.1 Reference to the Marine Policy Statement as a key national document
- 2.3 There are other reports available from North Tyneside (on the Council website) that may be a useful consideration as part of the scoping e.g. Green Infrastructure Study, Water Cycle study, Greenspace Study, Local Register SPD?
- 2.3.7 Refer to the Fish Quay Neighbourhood Plan and the Fish Quay Management Strategy
- 2.3.8 I believe the Newcastle North Tyneside Biodiversity Action Plan is 2012 not 2009 – but possible check this as I know it was completed for a while before approved by relevant committees.
- 2.3.8 Include the North Tyneside Tourism Strategy, which has aims and objectives related to the coast.
- 3.1.3 Potential to separate Local economy to incorporate a greater reference to Tourism and shipping related industry.
- 3.1.3 Include reference to Green Infrastructure in the health section and the benefits of routes to the coast from inland?
- 3.2.3 There needs to be reference to the development potential of a range of sites along the coast that are outlined in the consultation draft of the Local Plan. There has also been planning approval granted for a housing site to the north of Whitley Bay known as Wellfield (200 homes) which should be considered.
- 3.2.10 I am not aware of camp sites at the coast. There is a caravan park towards St Mary's but I didn't think there is camping? Include a reference to the Links as a place for informal recreation activity and the regeneration/refurbishment of Spanish City and the Spanish City Dome.
- 3.2.13 Include reference to the end/start point of the C2C cycle route.
- 3.2.13The coast is also the host of events during the year such as Mouth of the Tyne Festival, Light Show, Food Festival, circus, surfing competitions, 10k running race, Tynemouth Market, Whitley Bay Sandcastle competition – Pete Warne in tourism would be able to provide a more definitive list or refer to the Tourism Strategy (pete.warne@northtyneside.gov.uk – 0191 643 7411).
- 3.3.12 Should there be a reference to the Newcastle and North Tyneside Biodiversity Action Plan here (even though it has been referred to in para 2.3.8)?

- 3.4.4 There is also a small stream that flows through the links at a point called Duchess Dene. I imagine that this is too small to be tested for its water quality but just thought you should be aware of it in case there was any information.
- 3.5 Question whether noise and/or light should also be considered within this theme or at some other point in section 3. The justification would be the tranquillity of the coast and impact of noise and/or light pollution on the area. It could be useful to consider whether noise and light need to be screened in or out in Section 5 and explained why - just as has been done for air?
- 3.6.1 Perhaps include Monkseaton as well?
- 3.6.3 Possible reference to the improvements at Whitley Park, the acquisition by the Council of three long standing vacant properties along the coast and the successful coastal communities bids that have benefitted the Net building at the Fish Quay and the recent successful funding from Heritage Lottery Fund for Tynemouth Volunteer Life brigade museum at Spanish Battery.
- 3.6.4 Make reference to funding from the Townscape Heritage Initiative that has been a key role in the refurbishment/regeneration of the Fish Quay
- 3.6.5 Probably outside of the boundary but Howdon Wharf is recognised in the North East Aggregates Study for its significance to the aggregates industry – resulting from dredging of the Tyne.
- 3.8.1 Just a typo in to update x to Table 3.13
- 3.8.4 Perhaps it is worth noting that the Local Register has been adopted by the Council as an SPD
- Could the first row of Table 4.1. be explained in brief as has been earlier in the report as to why there is not a requirement for a SEA but due to its future role it was considered appropriate to do one.
- Table 6.1
    - Objective 2 - Is it worth separating the first bullet and last point as flooding and coastal change could be judged differently?
    - Objective 4 –Include the number of trips of cyclists using the coastal routes as an indicator
    - Objective 5 – Question 3 and subsequent questions raise the issue of 'affect' on the access animals/protected species etc but other questions are more direct with a clear protect and or enhance/does not involve the loss. Perhaps a clearer steer in the question to determine the impact of the affect – if it does have an affect will it be positive or negative? e.g. include a reference to promote/increase/ensure? One of the issues we have found in planning is the increase of visitors to the coastal protection areas and the potential detrimental impact this could have on the wildlife and habitat of the coast. I would question whether the possible target of increasing visitors to areas of ecological interest is best target to aim for?
    - Objective 6 – again it would help to clarify in the first question whether it would be for a positive or negative affect.
    - Objective 7 – Same point as above regarding 'affect'

- Objective 8 - Same point as above regarding 'affect'
- Objective 9 – Possibly a little more precise when referring to the objectives of the Local Plan – which ones in particular.
- Objective 9 - Same point as above regarding 'affect' and 'change'- is this positive or negative
- Objective 11 - Same point as above regarding 'affect'
- Possible indicator to be added could be the number of heritage assets added to or removed from the Heritage at Risk register?
- Objective 12 - Same point as above regarding 'affect' and 'change'- is this positive or negative
- Possible indicator to be added could be the number of heritage assets added to or removed from the Heritage at Risk register?
- Objective 14 - Same point as above regarding 'affect'

I hope these comments are constructive and please get in contact if you have any queries,

Yours sincerely

Peter Slegg
Planning Policy

Date: 30 July 2014
Our ref: 124644
Your ref: CS062000

NATURAL ENGLAND

Customer Services
Hornbeam House
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T 0300 060 3900

The Environment Team
Capita Symonds

FAO Katie Jackson

BY EMAIL ONLY

Dear Katie

Consultation: Hartley Cove to the River Tyne Coastal Strategy Strategic Environmental Assessment Scoping Report

Thank you for your consultation on the above dated 25 June 2014 which was received by Natural England on 25 June 2014.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

Natural England's comments are as follows:

1.Introduction
It is not clear how the stages highlighted in Table 1.1 (A1 to A5) relate to the structure of the scoping report outlined in Table 1.2. In particular, it is not clear how A3 (identifying environmental problems) has been addressed within the Scoping report. For example, a key environmental issue is the potential loss of inter-tidal habitat as a result of coastal squeeze. This does not however appear to have been raised as a specific issue.

2. Relevant Plans and Programmes
It's not clear why relevant European/international legislation/policy isn't included within this section.

2.2 National Polices and Plans
As much of the Coastal Strategy is located within/adjacent to European/nationally designated sites, the requirements of the Conservation of Habitats and Species Regulations 2010 (as amended) and The Wildlife And Countryside Act 1981 (as amended) are particularly relevant.

3. Baseline Environmental Condtions
The *'Northumberland and North Tyneside Rocky Foreshore 'Coastal Squeeze' Study'* (2010) is a key document as it provides the existing baseline in terms of extent of rocky foreshore habitat and predicted extent in light of implementation of SMP Policy.

3.3.2 The Conservation Objectives for the Northumbria Coast SPA have recently been revised (copy provided in the supporting e-mail).

Table 3.4 and 3.5

Relevant European/international and nationally designated sites within the study area have been identified. However, it needs to be recognised that there can be impacts on sites beyond the boundaries of the study. As such, the Coastal Strategy will require a Habitat Regulations Assessment (HRA) which must consider whether there will be a likely significant effect on all relevant European Sites and not just those falling within the study area/strategy boundary.

3.7 Landscape and Visual Amenity
This section should include relevant information about seascape as well as landscape. Coastal strategies (in general) should consider impacts from the sea (as well as land) – e.g. where new coastal defences are proposed.

Table 6.1
General: It's not clear what the value of having a 'possible indicator' and 'possible target' is. For example, in relation to Landscape and Visual Amenity the objective is to 'Protect and enhance landscape and seascapes through sympathetic coastal defence management'. The possible indicator is 'visual amenity for seafront properties' with the possible targets 'no adverse impact on existing landscape character and visual amenity' and 'enhancement of landscapes and improvement to the existing visual amenity'. The draft indicator does not clearly measure a positive or negative outcome. As such, it is not clear what the point of including is as +/- outcomes are picked up in the targets. This is repeated for other receptors.

Receptor: Biodiversity, flora and fauna – the SEA objective is '*Conserve and seek to enhance sites designated for their nature conservation and maintain access for all*'. This covers two separate issue - access and biodiversity - and should be separated. This is in the context where increasing access may in some circumstances have a negative impact on biodiversity – for example through increased disturbance of birds associated with the SPA/SSSI. Possible objective could be 'Protect and/or enhance designated sites' with an associated indicator of 'no reduction in reported extent or condition of internationally designated sites or SSSI'. It is recommended that the 'possible target' of 'increase visitor numbers to areas of ecological interest' is removed for the reasons outlined above.

The possible indicator is 'Threatened habitats and species' – what does this mean? Is this about extent/number? This should be clarified. It is also not clear how this relates to the possible targets.

Receptor: Landscape and Visual Amenity
Seascape is mentioned in the objective but not within the indicator/target – how will seascape be considered?

Targets are 'No adverse impact on existing landscape and visual amenity' and 'enhancement of landscapes and improvement to the existing visual amenity' – how will this be measured?

We would be happy to comment further should the need arise but if in the meantime you have any queries please do not hesitate to contact us.

For any queries relating to the specific advice in this letter only please contact Colin Godfrey on 03000 601164. For any new consultations, or to provide further information on this consultation please send your correspondences to consultations@naturalengland.org.uk.

Yours sincerely

Colin Godfrey
Northumbria Team

From: Dixon-Lack, Emma (MMO)
To: NTC Coastal Strategy
Cc: Robinson, Neil (MMO)
Subject: RE: Hartley Cove to the River Tyne Coastal Strategy | SEA Scoping Report Consultation
Date: 22 July 2014 14:52:09

Hi Katie,

I have reviewed the document and questions referred to below and I am for the most part content with what has been included. However, given that the EA risk assessment of river flooding at the North Shields Fish Quay is "1 in 100 (>1%) or greater annual probability of river flooding and 1 in 200 or greater (>0.5%) annual probability of flooding from the sea", I would expect to see consultation with the North Shields Fish Quay Co and for this organisation to appear in your list of consultees.

Contact details for this organisation are;

Nik Hanlon - [redacted]
North Shields Fish Quay Co
Tel: [redacted]
Mob: [redacted]

I hope this helps.

Emma Dixon-Lack
Marine Officer
Marine Management Organisation
Neville House
Central Riverside
Bell Street
North Shields
NE30 1LJ
Tel : [redacted]
Mobile: [redacted]

From: Hunter, Alan
To: NTC Coastal Strategy
Subject: Hartley Cove to the River Tyne Coastal Strategy | SEA Scoping Report Consultation
Date: 29 July 2014 14:30:45

Dear Katie

Hartley Cove to the River Tyne Coastal Strategy | SEA Scoping Report Consultation

Thank you for consulting English Heritage on this document. I have few substantive observations to make.

Section 3 of the Scoping Report sets out the Baseline Environmental Conditions. Section 3.8 deals with Cultural Heritage and Archaeology. Strictly speaking, the phrase 'cultural heritage' includes archaeology. It is not necessary to separate it out as you have.

Paragraphs 3.8.4-3.8.5 deal with locally listed heritage assets. Whilst local designation brings with it no additional statutory protection, local listing is a material planning consideration to be taken into account in the decision-making process. NPPF paragraph 135 informs that the effect of an application [or works] on their significance 'should be taken into account. A balanced judgement will be required having regard to scale of any harm and the significance of the heritage asset'.

Paragraph 3.8.6 concerns conservation areas. Paragraph 137 of the NPPF informs that efforts should be made, where change is proposed, to enhance or better reveal the significance of a conservation area and elements of its setting that make a positive contribution to it.

Paragraphs 3.8.7-3.8 8 deal with sites of archaeological interest. It should be noted that some non-designated archaeology may nevertheless be of national significance.

Section 5 of the Report deals with Key Environmental Issues and Opportunities. The key issue for the historic environment is to ensure that heritage assets (designated or otherwise) are conserved and, where appropriate, enhanced in a manner commensurate with their significance. On occasions, the setting of a heritage asset will be fundamental to its significance. Other possible key issues can be drawn from the observation made above.

It may also benefit you to look at English Heritage guidance on Strategic Environmental Assessment, Sustainability Appraisal, and the Historic Environment which can be found on the HELM website at www.helm.org.uk

http://www.helm.org.uk/guidance-library/strategic-environ-assessment-sustainability-appraisal-historic-environment/

Should you wish to discuss any of the matters I have raised I shall be happy to.

Yours sincerely

Alan

Alan Hunter | Principal Historic Environment Planning Adviser: North East

Direct Line: [redacted]
Mobile phone: [redacted]

English Heritage | Bessie Surtees House
41-44 Sandhill | Newcastle upon Tyne | NE1 3JF

Annex E

Topic Specific Definitions for the Assessment of Significance

E.1 Population, Human Health and Recreation

Effect		Description
++	Significant positive	• The option would result in a large permanent decrease in the number of people or properties at risk or affected by flooding and/or coastal erosion. • The option would result in a large permanent increase in the amount of people with good health. Determinants of good health would be permanently improved and may include; better employment opportunities, reduced levels of deprivation, better access to open space and recreational activities, improvements to environmental quality and community safety. • The option would permanently improve public access to the countryside and/or increase open space provisions (i.e. create new PRoWs /cycleways or make routes more accessible to less mobile users).
+	Minor Positive	• The option would/may result in a temporary or small permanent decrease in the number of people or property at risk or affected by flooding and/or coastal erosion. • The option would/may result in a temporary or small permanent increase in the amount of people with good health. Determinants of good health would/may be improved and may include; better employment opportunities, reduced levels of deprivation, better access to open space and recreational activities, improvements to environmental quality and community safety. • The option would temporarily improve public access to the countryside and/or increase open space provisions (i.e. create new PRoWs /cycleways or make routes more accessible to less mobile users).
o	Neutral or no effect	• The option would not result in any change to the amount of people or properties that are at currently at risk by flooding and/or coastal erosion. • The option would not result in any change to the amount of people with good health. • The option would not improve or restrict public access to open spaces and the countryside.
-	Minor Negative	• The option would/may result in a temporary or small permanent increase in the number of people or property at risk or affected by flooding and/or coastal erosion. • The option would/may result in a temporary or small permanent decrease in the amount of people with good health. Determinants of good health would/may be negatively affected and may include; poorer employment opportunities, higher levels of deprivation, restricted access to open space and recreational activities, reductions to environmental quality and community safety. • The option would temporarily restrict public access to the countryside and/or decrease open space provisions (i.e. obstruct PRoWs /cycleways or make routes less accessible to less mobile users).

Effect		Description
- -	Significant negative	• The option would result in a large permanent increase in the number of people or properties at risk or affected by flooding and/or coastal erosion. • The option would result in a large permanent decrease in the amount of people with good health. Determinants of good health would/may be negatively affected and may include; poorer employment opportunities, higher levels of deprivation, restricted access to open space and recreational activities, reductions to environmental quality and community safety. • The option would permanently restrict public access to the countryside and/or decrease open space provisions (i.e. result in the loss of PRoWs /cycleways or make routes inaccessible to the most user groups).
?	Uncertain or multiple effects, positive and negative	• From the level of information available the impact that the option would have on the objective is uncertain.

E.2 Local Economy

Effect		Description
++	Significant positive	• The option would result in a large permanent decrease in the amount of tourism assets at risk or affected by flooding, coastal erosion and sea level rise. • The option would create a permanent opportunity to host a new range of high profile temporary events along the coast. • The option would result in a large permanent decrease in the amount of fishing/port based assets at risk or affected by flooding, coastal erosion and sea level rise.
+	Minor Positive	• The option would/may result in a temporary or small permanent decrease in the amount of tourism assets at risk or affected by flooding, coastal erosion and sea level rise. • The option would/may create a temporary opportunity to host a new range of high profile temporary events along the coast. • The option would/may result in a temporary or small permanent decrease in the amount of fishing/port based assets at risk or affected by flooding, coastal erosion and sea level rise.
o	Neutral or no effect	• The option would not result in any change to the amount of tourism assets that are at risk by flooding, coastal erosion or sea level rise. • The option would not create and opportunities or restrict the ability to host any high profile temporary events along the coast. • The option would not result in any change to the amount of port/fishing assets that are at risk by flooding, coastal erosion or sea level rise.

Effect		Description
-	Minor Negative	• The option would/may result in a temporary or small permanent increase in the amount of tourism assets at risk or affected by flooding, coastal erosion and sea level rise. • The option would/may temporarily restrict the ability to host a range of high profile temporary events along the coast. • The option would/may result in a temporary or small permanent increase in the amount of fishing/port based assets at risk or affected by flooding, coastal erosion and sea level rise.
- -	Significant negative	• The option would result in a large permanent increase in the amount of tourism assets at risk or affected by flooding, coastal erosion and sea level rise. • The option would permanently restrict the ability to host a range of high profile temporary events along the coast. • The option would result in a large permanent increase in the amount of fishing/port based assets at risk or affected by flooding, coastal erosion and sea level rise.
?	Uncertain or multiple effects, positive and negative	• From the level of information available the impact that the option would have on the objective is uncertain.

E.3 Transport

Effect		Description
++	Significant positive	• The option would result in a permanent decrease in the length of transport infrastructure at risk or affected by flooding, coastal erosion and/or sea level rise (i.e. roads, railway tracks) • The option would result in a permanent decrease in the amount of assets associated with the transport infrastructure at risk or affected by flooding, coastal erosion and/or sea level rise (i.e. rail and bus stations).
+	Minor Positive	• The option would/may result in a temporary decrease in the length of transport infrastructure at risk or affected by flooding, coastal erosion and/or sea level rise (i.e. roads, railway tracks) • The option would/may result in a temporary decrease in the amount of assets associated with the transport infrastructure at risk or affected by flooding, coastal erosion and/or sea level rise (i.e. rail and bus stations).
o	Neutral or no effect	• The option would not result in any change to the length of the transport infrastructure that is at risk by flooding, coastal erosion or sea level rise. • The option would not result in any change to the amount of infrastructure assets that are at risk by flooding, coastal erosion or sea level rise.

Effect		Description
-	Minor Negative	• The option would/may result in a temporary increase in the length of transport infrastructure at risk or affected by flooding, coastal erosion and/or sea level rise (i.e. roads, railway tracks) • The option would/may result in a temporary increase in the amount of assets associated with the transport infrastructure at risk or affected by flooding, coastal erosion and/or sea level rise (i.e. rail and bus stations).
- -	Significant negative	• The option would result in a permanent increase in the length of transport infrastructure at risk or affected by flooding, coastal erosion and/or sea level rise (i.e. roads, railway tracks) • The option would result in a permanent increase in the amount of assets associated with the transport infrastructure at risk or affected by flooding, coastal erosion and/or sea level rise (i.e. rail and bus stations).
?	Uncertain or multiple effects, positive and negative	• From the level of information available the impact that the option would have on the objective is uncertain.

E.4 Biodiversity, Flora and Fauna

Effect		Description
++	Significant positive	• The option would have a large and sustained positive impact on European or national designated sites and/or protected species (e.g. it fully supports the conservation objectives of the site, or it leads to a long term increase in the population of protected species). • The option would have a strong positive effect on local biodiversity (e.g. through the removal of existing disturbance/pollutants, or results in the creation of new habitats and a long term improvement to the ecosystem structure or function).
+	Minor Positive	• The option would have a minor positive effect on European or national designated sites and/or protected species (e.g. it supports a few of the conservation objectives, or results in a short term increase in the population of protected species. • The option may have a positive net effect on local biodiversity (e.g. through the removal of existing disturbance/pollutants, or results in the creation of some habitat and a temporary improvement to the ecosystem structure or function).
o	Neutral or no effect	• The option would not have any effects on European or national designated sites and/or any protected species (including designated and non-designated).
-	Minor Negative	• The option would have a minor short-term negative effect on local conservation sites and species (e.g. through a minor increase in disturbance/pollutants, or some loss of habitat leading to temporary loss of ecosystem structure or function).

Effect		Description
- -	Significant negative	• The option would have a negative effect on European or national designated sites and/or protected species (i.e. by preventing any of the conservation objectives from being achieved or resulting in a long term decrease in the population of any species). These effects could not be reasonably mitigated. • The option would have large negative effects on biodiversity (e.g. through an increase in disturbance/pollutants, or a considerable loss of habitat leading to long term loss of ecosystem structure or function).
?	Uncertain or multiple effects, positive and negative	• From the level of information available the impact that the option would have on the objective is uncertain.

E.5 Water

Effect		Description
++	Significant positive	• The option would significantly decrease the amount of waste water, surface runoff and pollutant discharges so that the quality of that water receptors (including groundwater, surface water, sea water or drinking receptors) will be significantly improved and sustained and that all water targets (including those relevant to chemical and ecological condition) are reached and exceeded.
+	Minor Positive	• The option would lead to minor decreases in the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking receptors) may be improved to some level temporarily and that some water targets (including those relevant to chemical and ecological condition) will be reached/exceeded.
o	Neutral or no effect	• The option would not change amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors will not be affected.
-	Minor Negative	• The option would lead to minor increases in the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking receptors) may be decreased to some level temporarily and it may prevent some water targets (including those relevant to chemical and ecological condition) from being achieved.
- -	Significant negative	• The option would lead to major increases in the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking receptors) will be considerably increased and will prevent some or all water targets (including those relevant to chemical and ecological condition) from being achieved.
?	Uncertain or multiple effects, positive and negative	• From the level of information available the impact that the option would have on the objective is uncertain.

E.6 Landscape and Visual Amenity

Effect		Description
++	Significant positive	• The option would make a significant positive contribution to statutory-designated landscapes. • The option would have a significant positive effect on the setting and attractiveness of local landscapes and townscapes (e.g. through the replacement of poorly designed/derelict buildings with high quality development).
+	Minor Positive	• The option would serve to enhance statutory -designated landscapes. • The option would have a positive effect on the setting and attractiveness of local landscapes and townscapes.
o	Neutral or no effect	• The option would not have any effects on landscapes or visual amenity.
-	Minor Negative	• The option would have short-term negative effects on statutory -designated landscapes. • The option would have a negative effect on the intrinsic character of landscapes and townscapes. • The option would affect the visual amenity of local communities.
- -	Significant negative	• The option would have long-term negative effects on statutory-designated landscapes. • The option would severely affect the intrinsic character of landscapes and townscapes. • The option would severely affect the visual amenity of local communities.
?	Uncertain or multiple effects, positive and negative	• From the level of information available the impact that the option would have on the objective is uncertain.

E.7 Cultural Heritage

Effect		Description
++	Significant positive	• The option would make a significant positive and long-term contribution to the setting and conservation of designated and locally important cultural heritage features (e.g. – through enhancement of setting, permanent removal of a structure creating a negative visual impact, large scale enhancement of designated features). • The option would make a large positive and long term contribution to a historic landscape. The character and local distinctiveness will be permanently enhanced.
+	Minor Positive	• The option would bring minor short-term improvements to the setting and conservation of designated cultural heritage features (e.g. - temporary removal of structure creating a negative visual impact). • The option would make a minor positive and short term contribution to a historic landscape. The character and local distinctiveness will be temporarily enhanced.

Effect		Description
o	Neutral or no effect	• The option would not have any effects on any cultural heritage sites or assets. • The options would not enhance or alter/damage a historic landscape.
-	Minor Negative	• The option would bring minor short-term degradation to the setting and conservation of designated cultural heritage features (e.g. – temporary use of equipment/structures creating a negative visual impact). • The option would result in a minor and short term alteration to a historic landscape. The character and local distinctiveness will be temporarily altered/damaged.
- -	Significant negative	• The option would cause long-term degradation to the setting and conservation of designated and locally important cultural heritage features (e.g. – through direct and permanent loss or damage to designated sites, introduction of a structure that will have a considerable and permanent negative visual impact). • The option would result in a large and long term alteration to a historic landscape. The character and local distinctiveness will be permanently altered/damaged.
?	Uncertain or multiple effects, positive and negative	• From the level of information available the impact that the option would have on the objective is uncertain.

E.8 Geology, Soils and Material Assets

Effect		Description
++	Significant positive	• The option would have a large and sustained positive impact on nationally designated geological sites.
+	Minor Positive	• The option would have a temporary or minor permanent positive impact on a nationally designated geological site.
o	Neutral or no effect	• The option would not have any effects on geological conservation sites/important geological features of high importance.
-	Minor Negative	• The option would have a temporary or minor permanent negative impact on a nationally designated geological site.
- -	Significant negative	• The option would cause a substantial and permanent loss of or damage to a nationally designated geological site.
?	Uncertain or multiple effects, positive and negative	• From the level of information available the impact that the option would have on the objective is uncertain.

E.9 Climatic Factors

Effect		Description
++	Significant positive	• The option will increase resilience/decrease vulnerability to climate change in the wider environment.
+	Minor Positive	• The option may increase resilience/decrease vulnerability to climate change in the wider environment.
o	Neutral or no effect	• The option will not contribute to climate change or the resilience from it.
-	Minor Negative	• The option may decrease resilience/increase vulnerability to climate change in the wider environment.
- -	Significant negative	• The option will decrease resilience/increase vulnerability to climate change in the wider environment.
?	Uncertain or multiple effects, positive and negative	• From the level of information available the impact that the option would have on the objective is uncertain.

Annex F
Assessment of Alternatives

F.1 Policy Unit 1: Hartley Cove to Curry's Point (SMP 24.2)

PU 1 Option 0 – do nothing (baseline)

Objective	Effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	The option is not likely to result in any change to the amount of people and properties at risk of coastal erosion during the strategy timeframe. Flooding is not an issue due to the high ground.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Erosion of the cliffs would permanently restrict public access to the countryside through the loss of several sections of PRoW and a national cycle route. Access to the beach would be restricted through the loss of steps.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	The option is not likely to result in any change to the number of assets associated with the tourism industry at risk by flooding and coastal erosion during the strategy timeframe.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this Policy Unit.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option is not likely to result in any change to the risk posed by flooding and coastal erosion on the transport infrastructure during the strategy timeframe.	Neural (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	The option will allow the whole PU coastline to retreat naturally in-land resulting in the creation of rocky shore habitat. This will benefit European protected species found within the Northumbria Coast SPA and nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA would be fully supported. Negative effects on local biodiversity will result from erosion of Curry's Point and Wetlands LWS.	Significant Positive (++) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Erosion of the soft cliffs would lead to the temporary loss of Maritime Cliffs and Slopes BAP habitat until new habitat develops on the landward side.	Minor Negative (-) T (St), I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors will be affected.	Neural (o)

Objective	Effects	Significance of effects
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The option would have a temporary negative effect on the visual amenity associated with existing structures (the steps) left to deteriorate over the long term.	Minor Negative (-) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	There are no nationally designated historic assets within the PU however several Listed Buildings are within close proximity. The setting of St Mary's Lighthouse (Grade II) may be temporarily affected by a reduced visual amenity associated with existing structures (the steps) left to deteriorate over the long term.	Minor Negative (-) T (Lt), I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings within the PU. Several known archaeological sites are at risk of permanent loss due to coastal erosion. There is potential for unknown buried archaeology within the cliffs which may be at increased risk from erosion.	Significant Negative (- -) P, I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option would not enhance or alter/damage the character of St Mary's Conservation Area.	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	The rates of erosion are slow however there is potential for the permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI. Some buried geology however will be exposed.	Significant Negative (- -) P, I

PU 1 Option 1 - do minimum

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Rates of erosion are slow therefore the option is not likely to result in any change to the amount of people and properties at risk of coastal erosion during the strategy timeframe. Flooding is not an issue due to the high ground.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Erosion of the cliffs would restrict public access through the loss of several sections of PRoW and a national cycle route. Access to the beach could be temporarily restricted until reactive repair to the steps was undertaken.	Significant Negative (- -) P & T(St), I
3. Support the local economy through protection of assets related to the tourism industry.	Rates of erosion are slow and therefore the option is not likely to result in any change to the number of assets associated with the tourism industry at risk by flooding and coastal erosion during the strategy timeframe.	Neural (o)

Objective	Potential effects	Significance of effects
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this Policy Unit.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option is not likely to result in any change to the risk posed by flooding and/or coastal erosion on the transport infrastructure during the strategy timeframe.	Neural (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	The option will allow the majority of the cliff (except behind the steps) to retreat naturally in-land resulting in the creation of additional rocky shore habitat. This will benefit European protected species found within the Northumbria Coast SPA (although conservation objectives won't be fully supported) and Nationally protected species found within the Northumberland Shore SSSI. There will be a negative impact on local biodiversity with some loss of the Curry's Point and Wetlands LWS.	Minor Positive (+) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Erosion of the soft cliffs would lead to the temporary loss of Maritime Cliffs and Slops BAP habitat until new habitat develops on the landward side.	Minor Negative (-) T (St), I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors will be affected.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The option would not have any effects on landscapes/seascapes and visual amenity.	Neural (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	The option would not have any effect on nearby nationally designated historic assets or their setting (i.e. St Mary's Lighthouse, grade II).	Neural (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings within the PU. Several known archaeological sites are at risk of permanent loss due to coastal erosion. There is potential for unknown buried archaeology within the cliffs and this may be at risk from erosion.	Significant Negative (- -) P, I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option would not enhance or alter/damage the character of St Mary's Conservation Area.	Neural (o)

Objective	Potential effects	Significance of effects
14. Protect and seek to enhance sites designated for their geological interest.	The rates of erosion are slow however there is potential for the permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI. Some buried geology however will be exposed.	Significant Negative (- -) P, I

F.2 Policy Unit 2: Curry's Point to Trinity Road car park (including St Mary's Island) (SMP 25.1)

PU 2 Option 0 - do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Deterioration of the existing defence structures would result in a small increase in the number of people and properties at risk of flooding and sea level rise within the PU. Properties include those located on St Mary's Island. Erosion is not likely to be an issue within the timeframe for these properties. Loss of Curry's point could put greater pressure on defences at Whitley Bay, affecting a larger number of properties.	Minor Negative (-) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Deterioration of the existing defences would put several PRoW and a cycleway at risk of erosion and flooding (within 50-100 years). In the long term the loss of these routes would restrict public access to open space and the countryside.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	Deterioration of the existing defence structures would result in an increased risk of flooding to St Mary's Lighthouse. Sea level rise and deterioration of the causeway may lead to the tourist attraction eventually being cut off from the mainland.	Minor Negative (-) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this PU.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option would increase the risk posed by flooding and coastal erosion on the transport infrastructure, potentially resulting in the loss of a large car park and a minor road (The Links).	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	Where the existing defences deteriorate or are breached enough to allow the cliff to retreat naturally in-land, the creation of additional rocky shore habitat may be possible. This will benefit European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI. Conservation objectives of the SPA will be fully supported. There will be a negative impact on local biodiversity with some loss of the Curry's Point and Wetlands LWS.	Significant Positive (++) P, I

Objective	Potential effects	Significance of effects
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Erosion of the soft cliffs would lead to the temporary loss of Maritime Cliffs and Slops BAP habitat until new habitat develops on the landward side.	Minor Negative (-) T (St), I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors will be affected.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The option would have a temporary negative effect on the visual amenity associated with existing structures left to deteriorate over the long term	Minor Negative (-) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	The option could result in the loss of St Mary's Lighthouse (a grade II listed building) through erosion/sea level rise over the long term. The setting of this nationally important structure could also be negatively affected by the existing defence structures being left to deteriorate.	Significant Negative (- -) P & T (Lt), D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings within the PU. Several known archaeological sites would be at risk of permanent loss due to coastal erosion. There is potential for unknown buried archaeology within the cliffs and this would be at risk from erosion.	Significant Negative (- -) P, D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option would have a temporary negative effect on character of St Mary's Conservation Area if the iconic buildings on St Mary's Island are damaged by flooding.	Minor Negative (-) T (Lt), I
14. Protect and seek to enhance sites designated for their geological interest.	The rates of erosion are slow however there is potential for the permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI. Some buried geology however will be exposed.	Significant Negative (- -) P, D

PU 2 Option 1 - do minimum (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	This option will result in a small increase in the number of people and properties at risk of flooding. Properties on St Mary's Island would be at a temporary risk of flooding should the defences fail. Effects of climate change will increase the risk of flooding over time.	Minor Negative (-) T (St), I

Objective	Potential effects	Significance of effects
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Public access via several PRoW and a cycleway could be temporarily restricted if the existing defences are breached. Risk of flooding due to climate change would increase over time.	Minor Adverse (-) T (St), I
3. Support the local economy through protection of assets related to the tourism industry.	St Mary's Lighthouse could be temporarily at risk if the existing defence structures are breached. Sea level rise due to climate change may lead to the attraction eventually being cut off from the mainland and/or at an increased risk of flooding.	Minor Negative (-) T (St) & P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this Policy Unit.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option may result in a temporary risk of flooding and coastal erosion on the transport infrastructure if the defences are breached. This would affect two large car parks and a minor road (The Links). The risk of flooding on these assets would increase with climate change.	Minor Negative (-) T (St), I
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI. Local biodiversity within Curry's Point and Wetlands LWS will however be protected.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any impacts on the Maritime Cliffs and Slopes BAP habitat in this policy unit.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors would be affected.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The option would have a short term, temporary negative effect on the visual amenity associated with structures left to deteriorate to a point where they fail.	Minor Negative (-) T (St), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	The setting of St Mary's Lighthouse (a grade II listed building) could be affected temporarily by the existing defence structures being left to deteriorate to a point where they fail. Risk of flooding due to climate change would increase over time.	Minor Negative (-) T (St), I

Objective	Potential effects	Significance of effects
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings within the Policy Unit. Several known archaeological sites would be temporarily at risk from erosion and/or flooding should the existing defences fail.	Minor Negative (-) T (St), I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The character of St Mary's Conservation Area may be affected temporarily if the iconic buildings on St Mary's Island are damaged by flooding.	Minor Negative (-) Lt, Temp, SE
14. Protect and seek to enhance sites designated for their geological interest.	The option is unlikely to have in impact on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

PU 2 Option 2 - maintain

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	The risk of flooding may increase over time for a small number of properties due to the effect of climate change.	Minor Negative (-) T (St), I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The risk of flooding on several PRoWs and a cycleway will increase over time due to climate change.	Minor Negative (-) T (St), I
3. Support the local economy through protection of assets related to the tourism industry.	Sea level rise due to climate change may lead to St Mary's Lighthouse eventually being cut off from the mainland and/or at an increased risk of flooding.	Minor Negative (-) T (Mt), I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this PU.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The risk of flooding on two large car parks and a minor road (The Links) would increase over time due to climate change.	Minor Negative (-) T (St), I
6. Protect and seek to enhance sites designated for their nature conservation value.	Proactive maintenance of the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI. Local biodiversity within Curry's Point and Wetlands LWS will however be protected.	Significant Negative (- -) P, I

Objective	Potential effects	Significance of effects
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any impacts on the Maritime Cliffs and Slopes BAP habitat in this policy unit.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors would be affected.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The option would not have any effects on landscapes or visual amenity.	Neural (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Sea level rise due to climate change may lead to St Mary's Lighthouse eventually being cut off from the mainland and/or at an increased risk of flooding.	Minor Negative (+) T (St) & P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The option is unlikely to have any effect on non-designated cultural heritage assets.	Neural (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option would not have a positive or a negative effect on the character of St Mary's Conservation Area.	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	The option is unlikely to have in impact on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

F.3 Policy Unit 3: Trinity Road car park to Briardene Burn (SMP 25.2)

PU 3 Option 0 - do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Only one property, a boat house, it likely to be affected by an increased risk of flooding and coastal erosion during the strategy timeframe.	Minor Negative (-) P, I

Objective	Potential effects	Significance of effects
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Erosion of the cliffs will result in loss to part of the golf course and the loss of a section of PRoW. The boat house which is used for recreational purposes will also be affected. Conversely, the beach will be allowed to retreat naturally forming new open space.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	The Whitley bay Mini Golf Course is a popular tourist attraction on the coast and this option would result in a large loss of land used by the attraction (due to erosion), potentially making it unviable in the long term.	Minor Negative (-) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this PU.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option would increase the risk posed by flooding and coastal erosion on the transport infrastructure, affecting a large car park at Brierdene.	Minor Negative (-) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	The option will allow the coastline to retreat naturally in-land resulting in the creation of boulder and cobble beaches. This will benefit nationally protected species within the Northumberland Shore SSSI.	Minor Positive (+) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Natural erosion of the cliffs will lead to the creation of new LBAP Estuary and Coastal Habitat, reducing the issue of coastal squeeze with sea level rise.	Minor Positive (+) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not alter the existing outflow of water at Briardene Burn (assessed as having poor ecological quality status). There would be no positive or negative indirect effects on WBD and WFD targets.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or contribute to any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The option would not deal with the outflanking of defences in neighbouring PU to the north and south. Erosion behind these structures could lead to a negative impact on visual amenity.	Minor Negative (-) P, I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	There are no nationally designated historic assets within the PU.	Neural (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings within the Policy Unit. Several known archaeological sites would be at risk from coastal erosion and permanent loss. There is potential for unknown buried archaeology within the cliffs and this would be at risk from erosion.	Significant Negative (- -) P, D

Objective	Potential effects	Significance of effects
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	There are no Conservation Areas within this PU.	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no sights designated for their geological interest in this PU	Neural (o)

PU 3 Option 1 – managed realignment

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Only one property, a boat house, it likely to be affected by an increased risk of flooding and coastal erosion during the strategy timeframe.	Minor Negative (-) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Erosion of the soft cliffs will result in loss to most of the golf course and the loss of a section of PRoW. Loss of the boat house will remove this recreational resource out of the PU. Conversely, the beach will be allowed to retreat naturally forming new open space.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	The Whitley bay Mini Golf Course is a popular tourist attraction on the coast and this option would result in a large loss of land used by the attraction (due to erosion), potentially making it unviable in the long term.	Minor Negative (-) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this PU.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option would increase the risk posed by flooding and coastal erosion on the transport infrastructure, affecting a large car park at Brierdene.	Minor Negative (-) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	The option will allow the coastline to retreat naturally in-land (except where neighbouring PU defences connect) resulting in the creation of boulder and cobble beaches. This will benefit nationally protected species within the Northumberland Shore SSSI and counteract the effects of sea level rise.	Minor Positive (+) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Natural erosion of the cliffs will lead to the creation of new LBAP Estuary and Coastal Habitat, preventing the issue of coastal squeeze.	Minor Positive (+) P, I

Objective	Potential effects	Significance of effects
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not alter the existing outflow of water at Briardene Burn (assessed as having poor ecological quality status). There would be no positive or negative indirect effects on WBD and WFD targets.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The option would not have any effects on landscape/ seascape or visual amenity.	Neural (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	There are no nationally designated historic assets within the PU.	Neural (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings within the Policy Unit. Several known archaeological sites would be at risk from coastal erosion and permanent loss. There is potential for unknown buried archaeology within the cliffs and this would be at risk from erosion.	Significant Negative (- -) P, D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	There are no Conservation Areas within this PU.	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no sights designated for their geological interest in this PU	Neural (o)

F.4 Policy Unit 4: Briardene Burn to Table Rocks (SMP 25.3)

PU 4 Option 0 – do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Deterioration of the existing defence structures would result in a large number of people and properties being at risk of coastal erosion at the southern end of the PU (between Park Avenue and Cheviot View). Flooding is unlikely to be an issue for most properties due to the height of the cliffs however some may be at risk i.e. Watts Slope.	Significant Negative (- -) P, I

Objective	Potential effects	Significance of effects
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option would result in the deterioration and eventual loss of two defence structures which also function as promenades. These structures provide important access to the countryside for non-motorised users. Sections are also promoted as a national cycleway. Whitely Links at the northern end of the PU is an important area of open space. This option would put this land at risk of erosion and possibly flooding with sea level rise.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	The Rendezvous Cafe, an important tourist attraction, would be at an increased risk of flooding and erosion with this option (particularly with sea level rise).The shops and cafes, guest houses and hotels located along the Promenade (road) would also be at risk from erosion. A large loss of open space at Whitley Links and the promenades could compromise the ability to host some of the temporary events which take places throughout the year.	Significant Negative (- -) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would increase the risk of erosion on the A193 (Promenade) following deterioration of the Central Promenade defences.	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	Where the existing defences deteriorate or are breached enough to allow the cliff to retreat naturally in-land, the creation of additional rocky shore habitat may be possible at the southern end of the PU. This will benefit European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI. Conservation objectives of the SPA will be fully supported.	Significant Positive (++) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Following deterioration of the exiting defences, natural processes will be allowed to resume. This will benefit the Maritime Cliffs and Slopes BAP habitat found at the southern end of the PU.	Minor Positive (+) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	This option will place the main sewer serving Whitley Bay, which is located within the Central Promenade, at risk. If the sewer is damaged there will be significant secondary effects on water quality.	Significant Negative (- -) P, I
9. Protect and enhance existing and proposed land uses.	This option would place sections of the coast currently subject to programme of regeneration at a greater risk of flooding and erosion, for instance the Spanish City redevelopment and surrounding public realm. Areas protected through the Local Plan which help to enhance the open character of the coast (Whitley Links) would be at risk of erosion.	Significant Negative (- -) P, I

Objective	Potential effects	Significance of effects
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have long term negative effect on visual amenity and landscape character associated with the deterioration of defence structures and the collapse of properties into the sea.	Significant Negative (- -) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Several nationally important buildings/structures could be at an increased risk of erosion and/or flooding with this option. These include; the Whitley Bay War Memorial, Spanish City and the drinking fountain on the Northern Promenade (all Grade II listed). The setting of these structures could also be negatively affected by the deterioration of existing structures.	Significant Negative (- -) P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The option could result in the loss of several locally listed structures including; the Panama Gardens, the Rendezvous Cafe, Grant's Clock and the Rex Hotel. Several known archaeological sites would also be at risk from erosion. There is potential for unknown buried archaeology to be at risk of erosion.	Significant Negative (- -) P, I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	There are no Conservation Areas within this PU.	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	Rates of erosion are slow on this section of the coast however there is potential for the permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI at the southern end of Whitley Sands. Some buried geology however will be exposed.	Significant Negative (- -) P, D

PU 4 Option 1 – do minimum

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Reactive repair of the existing defence structures may result in a temporary increase in the number of people and properties at risk of flooding and coastal erosion, should the defences fail. Risk of flooding would increase over time for a number of properties due to climate change and associated sea level rise.	Minor Negative (-) T (St), I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Reactive repair may result in temporary restrictions to access of two defence structures which also function as promenades. These structures provide important access to the countryside for non-motorised users. Sections are also promoted as a national cycleway. Whitely Links at the northern end of the PU is an important area of open space. This option would put this land at risk of flooding should the defences fail. Risk would increase over time due to climate change and associated sea level rise.	Minor Negative (-) T (St), I

Objective	Potential effects	Significance of effects
3. Support the local economy through protection of assets related to the tourism industry.	The Rendezvous Cafe, an important tourist attraction, would be at a temporary risk of flooding with this option should the defences fail. This risk would increase with climate change and sea level rise. Any temporary flooding of the open space at Whitley Links or on the promenades, should the defences fail, could compromise the ability to host some of the temporary events which take places throughout the year.	Minor Negative (-) T (St), I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would increase the risk of temporary flooding on the A193 (Promenade) should the defences fail. This risk would increase with climate change and associated sea level rise.	Minor Negative (-) T (St), I
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any impacts on the Maritime Cliffs and Slopes BAP habitat in this PU.	Neutral (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	This option will place the main sewer serving Whitley Bay, which is located within the Central Promenade, at risk. If the sewer is damaged there will be temporary secondary effects on water quality until repairs can be made.	Minor Negative (-) T (St), I
9. Protect and enhance existing and proposed land uses.	This option would place sections of the coast currently subject to programme of regeneration at a temporary risk of flooding if the defences are breached, for instance the Spanish City redevelopment. Areas protected through the Local Plan which help to enhance the open character of the coast (Whitley Links) would also be at risk. Flooding would become more likely through the effects of climate change and sea level rise.	Minor Negative (-) T (St) & P, I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have a short term temporary negative effect on visual amenity associated with structures left to deteriorate to a point where they fail.	Minor Negative (-) T (St), I

Objective	Potential effects	Significance of effects
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Several nationally important buildings/structures could be placed at a temporary risk of flooding should the defences fail, or overtime due to the effects of sea level rise. These include; the Whitley Bay War Memorial, Spanish City and the drinking fountain on the Northern Promenade (all Grade II listed). The setting of these structures could also be negatively affected by the deterioration of existing defence structures, left to a point where they fail.	Significant Negative (- -) P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The option could put several locally listed structures including; the Panama Gardens, the Rendezvous Cafe, Grant's Clock and the Rex Hotel at a greater temporary risk of flooding should the defences fail. Several known archaeological sites could also be affected. Risk would increase through the effects of climate change and associated sea level rise.	Minor Negative (-) T (St), I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	There are no Conservation Areas within this PU.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	The option is unlikely to have an impact on the Tynemouth to Seaton SSSI.	Neutral (o)

PU 4 Option 2 – maintain

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	The risk of flooding may increase over time for a small number of properties along the sea front in Whitley Bay due to the effects of climate change and sea level rise. This increase would be permanent.	Minor Negative (-) T (St), I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The risk of flooding on several PRoWs and a cycleway will increase over time due to climate change.	Minor Negative (-) T (St), I
3. Support the local economy through protection of assets related to the tourism industry.	The risk of flooding to the Rendezvous Cafe and Spanish City, would increase over time do to climate change. The open space at Whitley Links which hosts some of the temporary events taking place throughout the year may be compromised do to the increase risk of flooding.	Minor Negative (-) T (St), I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)

Objective	Potential effects	Significance of effects
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Risk of flooding on the A193 (Promenade) would increase with climate change and associated sea level rise.	Minor Negative (-) T (St), I
6. Protect and seek to enhance sites designated for their nature conservation value.	Proactive maintenance of the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any impacts on the Maritime Cliffs and Slopes BAP habitat in this PU.	Neutral (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The main sewer serving Whitley Bay, which is located within the Central Promenade, would be protected ensuring no negative secondary effects on water quality.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	Sections of the coast currently subject to programme of regeneration, for instance the Spanish City redevelopment would be at an increased risk of flooding due to climate change. Areas protected through the Local Plan which help to enhance the open character of the coast (Whitley Links) would be also be at an increase risk.	Minor Negative (-) T (St), I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The option would not have any effect on the landscape or visual amenity.	Neutral (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Several nationally important buildings/structures would be at an increase risk of flooding due to climate change. These include; the Whitley Bay War Memorial, Spanish City and the drinking fountain on the Northern Promenade (all Grade II listed).	Minor Negative (-) T (St), I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The option could put several locally listed structures including; the Panama Gardens, the Rendezvous Cafe, Grant's Clock and the Rex Hotel at a greater risk of flooding due to climate change. Several known archaeological sites could also be affected.	Minor Negative (-) T (St), I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option would not have a positive or negative effect on the Cullercoats Conservation Area.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	The option is unlikely to have an impact on the Tynemouth to Seaton SSSI.	Neutral (o)

F.5 Policy Unit 5: Table Rocks to Brown's Point (SMP 25.4)

PU 5 Option 0 – do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Deterioration of the existing defence structures could result in a small increase in the number of people and properties at risk of coastal erosion during the strategies timeframe (1-2 properties, 100 year epoch). Due to the height of land on this section of the coast flooding is unlikely to be an issue.	Minor Negative (-) T (Lt), I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option would result in the deterioration and eventual loss of a defence structure which also functions as a promenade. This structure provides important access to the countryside for non-motorised users. A section of the coast promoted as a National Cycleway (NCN Route 1) would be at risk of erosion.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	The option would not result in any change to the amount of tourism assets that are at risk by flooding, coastal erosion and sea level rise.	Neutral (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would increase the risk of erosion on the A193 (Windsor Crescent) following deterioration of the existing defences.	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	Where the existing defences deteriorate or are breached enough to allow the cliff to retreat naturally in-land, the creation of additional rocky shore habitat may be possible at. This will benefit European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI. Conservation objectives of the SPA will be fully supported. There may be some loss of local biodiversity due to erosion of cliff top grassland (Brown's Point SLCI).	Significant Positive (++) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Following deterioration of the exiting defences, natural processes will be allowed to resume. This will benefit the Maritime Cliffs and Slopes BAP habitat found at the southern end of the PU.	Minor Positive (+) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	Sewers serving properties on Victoria Crescent and the wider Whitley Bay area could be damaged. This could lead to large increases in the amount of untreated waste water discharging into the sea. Some or all water quality targets may be compromised.	Significant Negative (- -) P, I
9. Protect and enhance existing and proposed land uses.	This option would not have any effects on sections of the coast currently subject to programme of regeneration. It does not conflict with any proposed land uses.	Neutral (o)

Objective	Potential effects	Significance of effects
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have a temporary negative effect on visual amenity associated with the deterioration of structures over the long term.	Minor Negative (-) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Cliff House a nationally important buildings (Grade II listed) is unlikely to be affected by erosion or flooding. The setting of this structures however could be negatively affected by the deterioration of existing structures.	Minor Negative (-) T (Lt), I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	Due to the slow rate of erosion there are unlikely to be any effects on non-designated historic assets and unknown buried archaeology.	Neutral (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option would have a permanent negative effect on the Cullercoats Conservation Area due to the loss through erosion of some iconic Victorian Terrace houses (100 year Epoch).	Significant Negative (- -) P, D
14. Protect and seek to enhance sites designated for their geological interest.	Rates of erosion are slow on this section of the coast however there is potential for the permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI at the southern end of Whitley Sands. Some buried geology however will be exposed.	Significant Negative (- -) P, D

PU 5 Option 1 – do minimum

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Reactive repair of the existing defence structures is not likely to result in any increase or decrease in the number of people and properties at risk of flooding and coastal erosion due to the slow erosion rates and the height of land on this section of the coast.	Neutral (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Reactive repair may result in temporary access restrictions on a defence structure which also functions as a promenade. This structure provides important access to the countryside for non-motorised users. The National Cycleway (NCN Route 1) which runs along higher ground on top of the cliff is unlikely to be affected.	Minor Negative (-) T (St), I
3. Support the local economy through protection of assets related to the tourism industry.	The option would not result in any change to the amount of tourism assets that are at risk by flooding, coastal erosion and sea level rise.	Neutral (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)

Objective	Potential effects	Significance of effects
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The A193 (Windsor Crescent) is unlikely to be affected by flooding due to the height of the land on this section of the coast.	Neutral (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Local biodiversity within Brown's Point SLCI (cliff top grassland) will however be protected.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any impacts on the Maritime Cliffs and Slopes BAP habitat in this policy unit.	Neutral (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors would be affected.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	This option would not have any effects on sections of the coast currently subject to programme of regeneration. It does not conflict with any proposed land uses.	Neutral (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have a temporary negative effect on visual amenity associated with the deterioration of structures left to a point where they fail.	Minor Negative (-) T (St), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Cliff House a nationally important building (Grade II listed) is unlikely to be affected by erosion or flooding. The setting of thisbuilding however could be negatively affected by the deterioration of existing structures left to a point where they fail.	Minor Negative (-) T (St), I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	Due to the slow rate of erosion there are unlikely to be any effects on non-designated historic assets and unknown buried archaeology.	Neutral (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option is unlikely to have an impact on the Cullercoats Conservation Area.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	The option is unlikely to have an impact on the Tynemouth to Seaton SSSI.	Neutral (o)

PU 5 Option 1 – maintain

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Proactive maintenance of the existing defence structures is not likely to result in any increase or decrease in the number of people and properties at risk of flooding and coastal erosion due to the slow erosion rates and the height of land on this section of the coast.	Neutral (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Temporary access restrictions on a defence structure which also functions as a promenade may be more common place with the effects of climate change. This structure provides important access to the countryside for non-motorised users.	Minor Negative (-) T (St), I
3. Support the local economy through protection of assets related to the tourism industry.	The option would not result in any change to the amount of tourism assets that are at risk by flooding, coastal erosion and sea level rise.	Neutral (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The A193 (Windsor Crescent) is unlikely to be affected by flooding due to the height of the land on this section of the coast.	Neutral (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	Proactive maintenance of the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Local biodiversity within Brown's Point SLCI (cliff top grassland) will however be protected.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any impacts on the Maritime Cliffs and Slopes BAP habitat in this policy unit.	Neutral (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors would be affected.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	This option would not have any effects on sections of the coast currently subject to programme of regeneration. It does not conflict with any proposed land uses.	Neutral (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option is not likely to have any effects on landscape character or visual amenity.	Neutral (o)

Objective	Potential effects	Significance of effects
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	This option is not likely to have any effects on designated archaeological sites and historic buildings.	Neutral (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	Due to the slow rate of erosion there are unlikely to be any effects on non-designated historic assets and unknown buried archaeology.	Neutral (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option not likely to have any effects on historic character or the Cullercoats Conservation Area.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	The option is unlikely to have an impact on the Tynemouth to Seaton SSSI.	Neutral (o)

F.6 Policy Unit 6: Brown's Point (SMP 26.1)

PU 6 Option 0 – do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Whilst undefended, erosion of the cliffs is very slow. This option is not likely to result in any increase or decrease in the number of people and properties at risk of flooding and coastal erosion.	Neutral (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option would not improve or restrict public access to open spaces and the countryside.	Neutral (o)
3. Support the local economy through protection of assets related to the tourism industry.	The option would not result in any change to the amount of tourism assets that are at risk by flooding, coastal erosion and sea level rise.	Neutral (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would not result in any change to the amount or length of infrastructure assets at risk by flooding, coastal erosion or sea level rise.	Neutral (o)

Objective	Potential effects	Significance of effects
6. Protect and seek to enhance sites designated for their nature conservation value.	Natural process would be allowed to continue as they do now. The option would therefore not have any impacts on European or National designated sites or protected species. There may be some very minor loss of local biodiversity due to erosion of cliff top grassland (Brown's Point SLCI).	Minor Negative (-) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Natural processes would be allowed to continue as they do now. The option would therefore have no impact on the Maritime Cliffs and Slopes BAP habitat found at the southern end of the PU.	Neutral (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors would be affected.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	This option would not have any effects on sections of the coast currently subject to programme of regeneration. It does not conflict with any proposed land uses.	Neutral (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would not have an impact on visual amenity or landscape character.	Neutral (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Cullercoats Radio Station, a nationally important building (Grade II listed) is unlikely to be affected due to the slow rates of erosion.	Neutral (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	Due to the slow rate of erosion there are unlikely to be any effects on non-designated historic assets and unknown buried archaeology.	Neutral (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option is unlikely to have an effect on the Cullercoats Conservation Area.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	Rates of erosion are slow on this section of the coast however there is potential for the permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI. Some buried geology however will be exposed.	Significant Negative (- -) P, D

F.7 Policy Unit 7: Cullercoats Bay (SMP 26.2)

PU 7 Option 0 – do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Deterioration of the existing defence structures would increase the risk of erosion to a small number of people and properties above the bay i.e. on Bank Top and Beverly Terrace. Properties most affected by flooding and erosion are located within the bay and include the Dove Marine Laboratory and Lifeboat Station.	Minor Negative (-) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option result in the loss through erosion of a PRoW and a National Cycle Route. A defence structure which also functions as a promenade would be lost. The popular sandy beach within the bay, which is an important area of open space, may be lost/reduced in size if the two piers protecting the bay are not retained. The ramp adjacent to the Dove Marine Laboratory provides an important access point for Jet Skiers and Kayakers. This ramp would be lost with this option.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	The Blue Flag beach within Cullercoats Bay is an important tourist asset. Loss of the two piers which protect the bay could alter the extent of sand. The promoted Arts trail which runs around the bay could be lost.	Significant Negative (- -) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The Brae and adjacent access ramp are used by fishermen to store and launch their boats. Any loss of these structures would severely restrict fishing related activities on this section of the coast. The Boat Yard on Victoria Crescent is unlikely to be affected by flooding or erosion.	Significant Negative (- -) P, I
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Victoria Crescent and Beverly Terrace would be lost due to erosion under this option. The bus route which stops at the intersection with Marden Avenue would also be affected.	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	Where the existing defences deteriorate or are breached enough to allow the cliff to retreat naturally in-land, the creation of additional rocky shore habitat may be possible at the northern end of the PU. This will benefit European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI. Conservation objectives of the SPA will be fully supported.	Significant Positive (++) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Following deterioration of the exiting defences, natural processes will be allowed to resume. This will benefit the Maritime Cliffs and Slopes BAP habitat found in the PU.	Minor Positive (+) P, I

Objective	Potential effects	Significance of effects
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	Sewers serving properties on Victoria Crescent, Beverly Terrace and the wider Whitley Bay area could be damaged. This could lead to large increases in the amount of untreated waste water discharging into the sea. Some or all water quality targets may be compromised.	Significant Negative (- -) P, I
9. Protect and enhance existing and proposed land uses.	This option would have an impact on regeneration works including loss of the recently completed improvements to Victoria Crescent.	Significant Negative (- -) P, I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have long term negative effect on visual amenity and landscape character associated with the deterioration of defence structures and the collapse of properties into the sea.	Significant Negative (- -) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Cliff House a nationally important buildings (Grade II* listed) would be lost due to erosion. Cullercoats Watch Club House, the Lifeboat Station and the Adamson Memorial Drinking Fountain (all Grade II listed) could also be lost due to erosion.	Significant Negative (- -) P, D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Dove Marine Laboratory (a historic asset of local interest) would be severely affected by flooding and potentially lost to the sea through erosion. Several known archaeological find spots may also be lost. Some unknown archaeology may also be lost or conversely, revealed.	Significant Negative (- -) P, D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	Loss of iconic historic buildings within the bay i.e. the Life Boat Station, Cliff House and the Cullercoats Watch Club House is likely to result in a large and long term alteration to the historic landscape. The Cullercoats Conservation Area would be adversely affected.	Significant Negative (- -) P, D
14. Protect and seek to enhance sites designated for their geological interest.	Rates of erosion are slow on this section of the coast however there is potential for the permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI. Some buried geology however will be exposed.	Significant Negative (- -) P, D

PU 7 Option 1 – do minimum

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Reactive repair of the existing defence structures may result in a small temporary increase in the number of people and properties at risk of flooding and coastal erosion, should the defences fail. Risk of flooding would increase over time for a properties within the bay due to climate change and associated sea level rise. Properties most affected include the Dove Marine Laboratory and Lifeboat Station.	Minor Negative (-) T (St), I

Objective	Potential effects	Significance of effects
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Reactive repair may lead to temporary access restrictions on a defence structure which also functions as a promenade, should the defences fail. Access via the ramp adjacent to the Dove Marine Laboratory could be temporarily restricted if damaged, impacting on Jet Skiers and Kayakers.	Minor Negative (-) T (St), I
3. Support the local economy through protection of assets related to the tourism industry.	The Blue Flag beach within Cullercoats Bay is an important tourist asset. Damage to the two piers which protect the bay could result in temporary alterations the extent of sand. Larger material could be deposited in the bay during storm events.	Minor Negative (-) T (Mt), I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The Brae and adjacent access ramp are used by fishermen to store launch and provide access to their boats. Fishing related activities on this section of the coast could be restricted temporarily if the defence structures were damaged. Risk of flooding for assets located on the Brae would increase with climate change and associated sea level rise.	Minor Negative (-) T (St), I
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Victoria Crescent and Beverly Terrace may be temporarily at risk of erosion should the existing defences fail however due to the height of the land flooding is unlikely to be an issue.	Minor Negative (-) T (St), I
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any impacts on the Maritime Cliffs and Slopes BAP habitat in this policy unit.	Neutral (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	Should the defences fail, sewers serving properties on Victoria Crescent, Beverly Terrace and the wider Whitley Bay area could be at a temporary risk of damage. This could lead to large temporary increases in the amount of untreated waste water discharging into the sea. Some or all water quality targets may be compromised.	Minor Negative (-) T (St), I
9. Protect and enhance existing and proposed land uses.	Reactive repair could lead to temporary risk of erosion should the defences fail. This could have an impact on regeneration works including the recently completed improvements to Victoria Crescent.	Minor Negative (-) T (St), I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have a temporary negative effect on visual amenity associated with the deterioration of structures left to a point where they fail.	Minor Negative (-) T (St), I

Objective	Potential effects	Significance of effects
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Reactive repair could place Cliff House, a nationally important building (Grade II* listed), at temporary risk of erosion should the defences fail. Synergistic effects could result in the permanent loss of this building. The Life Boat Station (Grade II) would be at an increased risk of flooding, especially with climate change.	Minor Negative (-) T (St), I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Dove Marine Laboratory (a historic asset of local interest) could be temporarily at risk of flooding should the defences fail. This risk would increase with climate change and associated sea level rise.	Minor Negative (-) T (St) & P, I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	Cullercoats Conservation Area could be adversely affected if iconic buildings within the bay are damaged by flooding/erosion.	Minor Negative (-) T (Mt), I
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI with this option.	Neutral (o)

PU 7 Option 2 – maintain

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	The risk of flooding may increase over time for a small number of properties within the bay due to the effects of climate change and sea level rise i.e. Dove Marine Laboratory	Minor Negative (-) T (St), I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The risk of flooding may increase overtime on a defence structure which also functions as a promenade. This may lead to temporary access restrictions.	Minor Negative (-) T (St), I
3. Support the local economy through protection of assets related to the tourism industry.	The Blue Flag beach within Cullercoats Bay is an important tourist asset. The effects of climate change may result in larger material being deposited in the bay during storm events.	Minor Negative (-) T (Mt), I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The Brae and adjacent access ramp are used by fishermen to store, launch and access their boats. Risk of flooding for assets located on the Brae would increase with climate change and associated sea level rise.	Minor Negative (-) P, I
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would not result in any change to the amount or length of infrastructure assets at risk by flooding, coastal erosion or sea level rise.	Neutral (o)

Objective	Potential effects	Significance of effects
6. Protect and seek to enhance sites designated for their nature conservation value.	Proactive maintenance of the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any impacts on the Maritime Cliffs and Slopes BAP habitat in this policy unit.	Neutral (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	There are unlikely to be any changes to the amount of waste water, surface runoff/or pollutant discharges with this option.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	This option would unlikely to have any effects on sections of the coast currently subject to programme of regeneration. It does not conflict with any proposed land uses.	Neutral (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option is unlikely to have an effect on visual amenity or landscape character.	Neutral (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	The Life Boat Station (Grade II) would be at an increased risk of flooding due to the effects of climate change.	Minor Negative (-) P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Dove Marine Laboratory (a historic asset of local interest) would be at an increased risk of flooding with climate change and associated sea level rise.	Minor Negative (-) P, I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	Cullercoats Conservation Area could be adversely affected if iconic buildings within the bay are damaged by flooding/erosion. The risk to iconic buildings within the bay would increase with climate change and sea level rise.	Minor Negative (-) T (Mt), I
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI with this option.	Neutral (o)

PU 7 Option 3 – improve

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	The option would not result in any change to the amount of people or property currently at risk of flooding and/or coastal erosion (i.e. existing protection provision will be sustained and the effects of climate change counteracted).	Neutral (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option would not improve or restrict public access to open spaces and the countryside (i.e. existing protection provision will be sustained and the effects of climate change counteracted).	Neutral (o)
3. Support the local economy through protection of assets related to the tourism industry.	The option would not result in any change to the amount of tourism assets at risk of flooding	Neutral (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The Brae and adjacent access ramp are used by fishermen to store and launch their boats. This option would ensure protection of assets located on the Brae during storm events (currently at risk from flooding during these events).	Minor Positive (+) P, I
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option would not result in any change to the length of the transport infrastructure or the number of its assets at risk of flooding or erosion.	Neutral (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	This option will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any impacts on the Maritime Cliffs and Slopes BAP habitat in this policy unit.	Neutral (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	There are unlikely to be any changes to the amount of waste water, surface runoff/or pollutant discharges with this option.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	This option would unlikely to have any effects on sections of the coast currently subject to programme of regeneration. It does not conflict with any proposed land uses.	Neutral (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The option may have a negative effect or visual amenity due to restricted views of the sea and surrounding landscape with an increase to the height of the sea walls.	Minor Negative (-) P, I

Objective	Potential effects	Significance of effects
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	The Life Boat Station (Grade II) would continue to be protected and the effects of climate change would be counteracted.	Neutral (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Dove Marine Laboratory (a historic asset of local interest) would continue to be protected and the effects of climate change would be counteracted	Neutral (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option would not have a positive or negative effect on the Cullercoats Conservation Area.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI with this option.	Neutral (o)

F.8 Policy Unit 8: Tynemouth North Point (SMP 26.3)

PU 8 Option 0 – do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Whilst undefended, erosion of the cliffs is very slow. This option is not likely to result in any increase or decrease in the number of people and properties at risk of flooding and coastal erosion.	Neutral (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option would not improve or restrict public access to open spaces and the countryside.	Neutral (o)
3. Support the local economy through protection of assets related to the tourism industry.	The option would not result in any change to the amount of tourism assets that are at risk by flooding, coastal erosion and sea level rise.	Neutral (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would not result in any change to the amount or length of infrastructure assets at risk by flooding, coastal erosion or sea level rise.	Neutral (o)

Objective	Potential effects	Significance of effects
6. Protect and seek to enhance sites designated for their nature conservation value.	Natural process would be allowed to continue as they do now. The option would therefore not have any impacts on European or National designated sites or protected species.	Neutral (o)
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Natural processes would be allowed to continue as they do now. The option would therefore have no impact on the Maritime Cliffs and Slopes BAP habitat found within the PU.	Neutral (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors would be affected.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	This option would not have any effects on sections of the coast currently subject to programme of regeneration. It does not conflict with any proposed land uses.	Neutral (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would not have an impact on visual amenity or landscape character.	Neutral (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	There are no designated archaeological sites and historic buildings within the PU. The setting of nearby buildings and sites is unlikely to be effected.	Neutral (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There is one non-designated find spot within this unit (boulder with runic inscription – HER727) which is currently unprotected and located beyond the coastline. This option will not alter its protection.	Neutral (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option is unlikely to have an effect on the Cullercoats Conservation Area.	Neutral (o)

Objective	Potential effects	Significance of effects
14. Protect and seek to enhance sites designated for their geological interest.	Rates of erosion are slow on this section of the coast however there is potential for the permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI. Some buried geology however will be exposed.	Significant Negative (- -) P, D

F.9 Policy Unit 9: Tynemouth Longsands (SMP 26.4)

PU 9 Option 0 – do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Deterioration of the existing defence structures is unlikely to result in any additional properties being at risk of flooding and erosion. The effects of climate change would increase the risk of flooding and erosion to a small number of properties located on the beach i.e. Tynemouth Canoe Club building and Crusoe's Cafe.	Minor Negative (-) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option would result in the loss, through erosion, of a PRoW and short section of a National Cycle Route in the northern section of the PU. A defence structure which also functions as a promenade would be lost.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	Tynemouth Longsands is a Blue Flag beach and an important tourist asset. Rubble from structures left to fall into the sea at the northern end of the PU could be deposited on the beach with negative impacts on amenity. Sea level rise and coastal squeeze could result in loss to beach area. Crusoe's Cafe is a popular destination for tourists, this could be lost under this option.	Minor Negative (-) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	A short section of the Grand Parade in the northern part of the PU and another short section in the southern part (above the Canoe Club building) could be lost due to erosion (100 year epoch).	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	Where the existing defences in the northern and southern parts of the PU deteriorate or are breached enough to allow the cliff to retreat naturally in-land, the creation of additional rocky shore habitat may be possible. This will benefit European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI. Conservation objectives of the SPA will be fully supported. On the other hand Tynemouth Longsands (a SLCI), if unmanaged could be damaged due to recreation pressure and partly lost due to the effects of sea level rise and coastal squeeze.	Multiple Effects +/- (?) P, I

Objective	Potential effects	Significance of effects
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Following deterioration of the existing defences in the northern and southern parts of the PU, natural processes will be allowed to resume. This will benefit the Maritime Cliffs and Slopes BAP habitat found in the PU. On the other hand, Coastal Sand Dune BAP habitat may be negatively affected by unmanaged recreation pressures and increases in sea levels leading to more erosion at the base and less material for dune formation.	Multiple Effects +/- (?) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	Sewers serving properties on the Grand Parade and the wider Tynemouth area could be damaged. This could lead to large increases in the amount of untreated waste water discharging into the sea. Some or all water quality targets may be compromised.	Significant Negative (- -) P, I
9. Protect and enhance existing and proposed land uses.	This option would have a negative impact on proposed regeneration works including loss of the southern vehicular access road which is due to be upgraded with provision for a new turning point.	Significant Negative (- -) P, I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have long term negative effect on visual amenity and landscape character associated with the deterioration of defence structures and the collapse of properties into the sea.	Significant Negative (- -) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	No nationally important listed buildings would be at risk from erosion under this option however, their setting would be negatively affected by the deterioration of some existing defence structures i.e. Church of St George (Grade I listed).	Minor Negative (-) T (Lt), D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Tynemouth Open Pool (a historic asset of local interest) would potentially be lost to the sea through erosion. The Lion's Head Fountain (currently covered by sand dunes) could be exposed and damaged/lost. Some unknown archaeology may also be lost or revealed.	Significant Negative (- -) P, D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Cullercoats and Tynemouth Village Conservation Areas fall within this PU. Iconic buildings that characterise these areas are unlikely to be affected by this option.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	Rates of erosion are slow on this section of the coast however there is potential for the permanent loss of geology associated with the Tynemouth to Seaton Sluice SSSI in the northern part of the PU. Some buried geology however will be exposed.	Significant Negative (- -) P, D

PU 9 Option 1 – do minimum

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Deterioration of the existing defence structures to a point where they fail is unlikely to result in any additional properties being at risk of flooding and erosion. The effects of climate change would increase the risk of flooding and erosion to a small number of properties located on the beach i.e. Tynemouth Canoe Club building and Crusoe's Cafe.	Minor Negative (-) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option could result in a temporary obstruction to a PRoW and short section of a National Cycle Route in the northern section of the PU if the defences were left to a point where they fail. A defence structure which also functions as a promenade could also be obstructed.	Minor Negative (-) P, I
3. Support the local economy through protection of assets related to the tourism industry.	Tynemouth Longsands is a Blue Flag beach and an important tourist asset. Sea level rise and coastal squeeze could result in loss to beach area. Crusoe's Cafe is a popular destination for tourists, this could be lost under this option.	Minor Negative (-) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would not result in any change to the amount or length of infrastructure assets at risk by flooding, coastal erosion or sea level rise.	Neutral (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Reactive repair of visitor access points on Tynemouth Longsands (a SLCI) will prevent some damage resulting from recreation pressure however, part of the dune system could be lost due to the effects of sea level rise and coastal squeeze.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Reactive repair of the existing defences in the northern and southern parts of the PU will prevent natural processes. This will have a negative effect on the Maritime Cliffs and Slopes BAP habitat found in the PU. Coastal Sand Dune BAP habitat may also be negatively affected by increases in sea levels leading to more erosion at the base and less material for dune formation.	Significant Negative (- -) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors would be affected.	Neutral (o)

Objective	Potential effects	Significance of effects
9. Protect and enhance existing and proposed land uses.	This option could compromise proposed regeneration works on the southern vehicular access road which is due to be upgraded with provision for a new turning point.	Minor Negative (-) T (St), I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option could have a negative effect on visual amenity and landscape character associated with the deterioration of defence structures left to a point where they fail. Buildings on the beach vulnerable to the effects of climate change could also have a negative effect on visual amenity if they are damaged or collapse into the sea.	Minor Negative (-) T (St), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	No nationally important listed buildings would be at risk from erosion under this option however, their setting would be negatively affected by the deterioration of some existing defence structures left to a point where they fail i.e. Church of St George (Grade I listed).	Minor Negative (-) T (St), D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Tynemouth Open Pool (a historic asset of local interest) would potentially be damaged if only reactive repair of the defences are carried out. The Lion's Head Fountain (currently covered by sand dunes) could be exposed and damaged/lost. Some unknown archaeology may also be lost or revealed.	Significant Negative (- -) P, D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Cullercoats and Tynemouth Village Conservation Areas fall within this PU. Iconic buildings that characterise these areas are unlikely to be affected by this option.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI with this option.	Neutral (o)

PU 9 Option 2 – maintain

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Proactive maintenance of the existing defence structures is unlikely to result in any additional properties being at risk of flooding and erosion above the beach. The effects of climate change would increase the risk of flooding and erosion to a small number of properties located on the beach i.e. Tynemouth Canoe Club building and Crusoe's Cafe.	Minor Negative (-) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	A defence structure which also functions as a promenade could be temporarily obstructed as the defence becomes less affective against sea level rise and climate change.	Minor Negative (-) T (St), I

Objective	Potential effects	Significance of effects
3. Support the local economy through protection of assets related to the tourism industry.	Tynemouth Longsands is a Blue Flag beach and an important tourist asset. Sea level rise and coastal squeeze could result in loss to beach area. Crusoe's Cafe is a popular destination for tourists, this could be lost under this option.	Minor Negative (-) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would not result in any change to the amount or length of infrastructure assets at risk by flooding, coastal erosion or sea level rise.	Neutral (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Proactive maintenance of visitor access points on Tynemouth Longsands (a SLCI) will prevent some damage resulting from recreation pressure however, part of the dune system could be lost due to the effects of sea level rise and coastal squeeze.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Proactive maintenance of the existing defences in the northern and southern parts of the PU will prevent natural processes. This will have a negative effect on the Maritime Cliffs and Slopes BAP habitat found in the PU. Coastal Sand Dune BAP habitat may also be negatively affected by increases in sea levels leading to more erosion at the base and less material for dune formation.	Significant Negative (- -) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is not likely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	Proposed regeneration works on the southern vehicular access road would be vulnerable to the effects of sea level rise and climate change with this option.	Minor Negative (-) T (St), I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	Buildings on the beach vulnerable to the effects of climate change could have a negative effect on visual amenity if they are damaged or collapse into the sea.	Minor Negative (-) T (St), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	This option is unlikely to have any effects on designated cultural heritage sites or assets.	Neutral (o)

Objective	Potential effects	Significance of effects
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Lion's Head Fountain (currently covered by sand dunes) could be exposed and damaged/lost with the effects of sea level rise and climate change. Some unknown archaeology may also be lost or revealed.	Significant Negative (- -) P, D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Cullercoats and Tynemouth Village Conservation Areas fall within this PU. Iconic buildings that characterise these areas are unlikely to be affected by this option.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI with this option.	Neutral (o)

PU 9 Option 3 – maintain (groyne field)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Creation of a groyne field could provide better protection to properties located on the beach by trapping sediment in the bay and preventing long shore drift. This would result in a small permanent reduction in the number of people and properties currently at risk of erosion and flooding. i.e. Crusoe's Cafe.	Minor Positive (+) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Access across the beach for recreation would be restricted following introduction groynes perpendicular to the shoreline. Conversely a wide area of beach will be maintained and the effects of coastal squeeze within this PU over time will be counteracted. The supply of sediment may be reduced for beaches further down the coast i.e. King Edwards Bay.	Multiple Effects +/- (?) P, I
3. Support the local economy through protection of assets related to the tourism industry.	Tynemouth Longsands is a Blue Flag beach and an important tourist asset. This option would sustain the beach and help to protect Crusoe's Cafe (a popular destination for tourists) from the effects of climate change.	Neutral (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would not result in any change to the amount or length of infrastructure assets at risk by flooding, coastal erosion or sea level rise.	Neutral (o)

Objective	Potential effects	Significance of effects
6. Protect and seek to enhance sites designated for their nature conservation value.	Maintaining the existing hard defences in the PU will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Creation of the offshore reef however, should help to sustain the dune system and the Tynemouth Longsands SLCI.	Multiple Effects +/- (?) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Maintaining the existing hard defences in the northern and southern parts of the PU will prevent natural processes. This will have a negative effect on the Maritime Cliffs and Slopes BAP habitat found in the PU. The Coastal Sand Dune BAP habitat however may benefit from the creation of a groyne field. This could reduce erosion at the base of the dune and trap more material for dune formation.	Multiple Effects +/- (?) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is not likely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	There are unlikely to be any impacts on land use with this option.	Neutral (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The introduction of a groyne field is likely to have a negative impact on the landscape and seascape, although the effects are largely dependent upon implementation.	Minor Negative (-) P, I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	This option is likely to have minor negative impacts on the setting of designated cultural heritage sites or assets i.e. Church of St George (Grade I listed) due to the groynes prominence in the landscape.	Minor Negative (-) P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	Protection will be sustained for The Lion's Head Fountain (currently covered by sand dunes) under this option. Protection may be improved for the Tynemouth Outdoor Pool (currently at risk of flooding).	Minor Positive (+) P, I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Cullercoats and Tynemouth Village Conservation Areas fall within this PU. Iconic buildings that characterise these areas are unlikely to be lost/damaged by this option.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI with this option.	Neutral (o)

PU 9 Option 4 – maintain (offshore reef)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Creation of an offshore reef could provide better protection to properties located on the beach by reducing the energy of waves and trapping more sediment in the bay. This would result in a small permanent reduction in the number of people and properties currently at risk of erosion and flooding. i.e. Crusoe's Cafe.	Minor Positive (+) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Introduction of an offshore reef could have an impact on the quality of surfing however the effects of this are unclear. Provision for on-shore access would be sustained and the effects of climate change counteracted.	Uncertain Effects (?) P, Sy
3. Support the local economy through protection of assets related to the tourism industry.	Tynemouth Longsands is a Blue Flag beach and an important tourist asset. This option would sustain the beach and help to protect Crusoe's Cafe (a popular destination for tourists) from the effects of climate change.	Neutral (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	This option would not result in any change to the amount or length of infrastructure assets at risk by flooding, coastal erosion or sea level rise.	Neutral (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	Maintaining the existing hard defences in the PU will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Creation of the offshore reef however, should help to sustain the dune system and the Tynemouth Longsands SLCI.	Multiple Effects +/- (?) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Maintaining the existing hard defences in the northern and southern parts of the PU will prevent natural processes. This will have a negative effect on the Maritime Cliffs and Slopes BAP habitat found in the PU. The Coastal Sand Dune BAP habitat however may benefit from the creation of an offshore reef. This could reduce erosion at the base of the dune and trap more material for dune formation.	Multiple Effects +/- (?) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is not likely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	There are unlikely to be any impacts on land use with this option.	Neutral (o)

Objective	Potential effects	Significance of effects
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The offshore reef will be a prominent feature within the seascape. The impact on the landscape/seascape is likely to be negative however the effects will be largely dependent upon implementation	Minor Negative (-) P, I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	This option is likely to have minor negative impacts on the setting of designated cultural heritage sites or assets i.e. Church of St George (Grade I listed) due to the reefs prominence in the landscape/seascape.	Minor Negative (-) P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	Protection will be sustained for The Lion's Head Fountain (currently covered by sand dunes) under this option. Protection may be improved for the Tynemouth Outdoor Pool (currently at risk of flooding).	Minor Positive (+) P, I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Cullercoats and Tynemouth Village Conservation Areas fall within this PU. Iconic buildings that characterise these areas are unlikely to be lost/damaged by this option.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI with this option.	Neutral (o)

PU 9 Option 5 – managed realignment

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Expansion of the dunes seaward will result in the loss of This would result in a small permanent reduction in the number of people and properties currently at risk of erosion and flooding. i.e. Crusoe's Cafe.	Minor Positive (+) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Introduction of an offshore reef could have an impact on the quality of surfing however the effects of this are unclear. Provision for on-shore access would be sustained and the effects of climate change counteracted.	Uncertain Effects (?) P, Sy
3. Support the local economy through protection of assets related to the tourism industry.	Tynemouth Longsands is a Blue Flag beach and an important tourist asset. This option would sustain the beach and help to protect Crusoe's Cafe (a popular destination for tourists) from the effects of climate change.	Neutral (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based industries within this PU.	Neutral (o)

Objective	Potential effects	Significance of effects
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The access roads onto the beach could be temporarily restricted as the defences protecting this infrastructure become less affective against sea level rise and climate change.	Minor Negative (-) T (St), I
6. Protect and seek to enhance sites designated for their nature conservation value.	Maintaining the existing hard defences in the PU will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Creation of the offshore reef however, should help to sustain the dune system and the Tynemouth Longsands SLCI.	Multiple Effects +/- (?) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Maintaining the existing hard defences in the northern and southern parts of the PU will prevent natural processes. This will have a negative effect on the Maritime Cliffs and Slopes BAP habitat found in the PU. The Coastal Sand Dune BAP habitat however may benefit from the creation of an offshore reef. This could reduce erosion at the base of the dune and trap more material for dune formation.	Multiple Effects +/- (?) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is not likely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neutral (o)
9. Protect and enhance existing and proposed land uses.	There are unlikely to be any impacts on land use with this option.	Neutral (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The introduction of larger structures (sea walls) and an offshore reef is likely to have a negative impact on the landscape and seascape, although the effects are largely dependent upon implementation.	Minor Negative (-) P, I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	This option is likely to have minor negative impacts on the setting of designated cultural heritage sites or assets i.e. Church of St George (Grade I listed).	Minor Negative (-) P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	Protection will be sustained for The Lion's Head Fountain (currently covered by sand dunes) under this option. Protection may be improved for the Tynemouth Outdoor Pool (currently at risk of flooding).	Minor Positive (+) P, I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Cullercoats and Tynemouth Village Conservation Areas fall within this PU. Iconic buildings that characterise these areas are unlikely to be affected by this option.	Neutral (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI with this option.	Neutral (o)

F.10 Policy Unit 10: Sharpness Point (SMP 26.5)

PU 10 Option 0 – do nothing (baseline)

Objective	Effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	This option is not likely to result in any change to the amount of people and properties at risk of coastal erosion during the strategy timeframe. Flooding is not an issue due to the high ground.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Access to the beach would be permanently restricted through the loss of steps.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	This option is not likely to result in any change to the number of assets associated with the tourism industry at risk by flooding and coastal erosion during the strategy timeframe.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this Policy Unit.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option is not likely to result in any change to the risk posed by flooding and coastal erosion on the transport infrastructure during the strategy timeframe.	Neural (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	The option will allow the whole of the PU coastline to retreat naturally in-land resulting in the creation of rocky shore habitat. This will benefit European protected species found within the Northumbria Coast SPA and nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA would be fully supported.	Significant Positive (++) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Erosion of the soft cliffs would lead to the temporary loss of Maritime Cliffs and Slops BAP habitat until new habitat develops on the landward side.	Minor Negative (-) T (St), I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The pumping station located on sharpness point could be at risk of erosion under this option. Loss of this infrastructure could change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors will be affected.	Significant Negative (- -) P, I
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The steps currently have a negative impact on visual amenity due to their poor condition (heavily abraded). This option will not change the impact.	Neural (o)

Objective	Effects	Significance of effects
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	There are no nationally designated historic assets within the PU and the Listed Buildings within close proximity are unlikely to have their setting affected.	Neural (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings within the PU. The known archaeological sites are not at risk of permanent loss through coastal erosion. The potential for unknown buried archaeology within/on the cliffs is low.	Neural (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option is unlikely to have an effect on the character of Tynemouth Conservation Area	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

PU 10 Option 1 – do minimum

Objective	Effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	This option is not likely to result in any change to the amount of people and properties at risk of coastal erosion during the strategy timeframe. Flooding is not an issue due to the high ground.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Access to the beach may be temporarily restricted if the steps are left to a point where they fail.	Minor Negative (-) T (St), I
3. Support the local economy through protection of assets related to the tourism industry.	This option is not likely to result in any change to the number of assets associated with the tourism industry at risk by flooding and coastal erosion during the strategy timeframe.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this Policy Unit.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option is not likely to result in any change to the risk posed by flooding and coastal erosion on the transport infrastructure during the strategy timeframe.	Neural (o)

Objective	Effects	Significance of effects
6. Protect and seek to enhance sites designated for their nature conservation value.	The option will allow the coastline (except behind the steps) to retreat naturally in-land resulting in the creation of rocky shore habitat. This will benefit European protected species found within the Northumbria Coast SPA and nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA would be partly supported.	Minor Positive (+) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Erosion of the soft cliffs would lead to the temporary loss of Maritime Cliffs and Slops BAP habitat (except behind the steps) until new habitat develops on the landward side.	Minor Negative (-) T (St), I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The pumping station located on sharpness point could be at risk of erosion under this option. Loss of this infrastructure could change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors will be affected.	Significant Negative (- -) P, I
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	The steps currently have a negative impact on visual amenity due to their poor condition (heavily abraded). This option will not change the impact.	Neural (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	There are no nationally designated historic assets within the PU and the Listed Buildings within close proximity are unlikely to have their setting affected.	Neural (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings within the PU. The known archaeological sites are not at risk of permanent loss through coastal erosion. The potential for unknown buried archaeology within/on the cliffs is low.	Neural (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option is unlikely to have an effect on the character of Tynemouth Conservation Area	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

F.11 Policy Unit 11: Tynemouth Shortsands (King Edward's Bay) (SMP 26.6)

PU 11 Option 0 – do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Deterioration of the existing defence structures is unlikely to result in any change to the number of people and properties at risk of erosion and/or flooding. The lifeguard hut located on the beach would remain at risk.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option result in the loss through erosion of several PRoWs and a National Cycle Route. A defence structure which also functions as a promenade would be lost. A number of steps and an access ramp which provides important access to the beach would be lost.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	The option would not change the number of tourist assets at risk	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing/port based activities in this PU.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Sea Banks (the coastal road) would be lost due to erosion under this option. A number of car parking spaces at Percy Gardens would be lost.	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	Where the existing defences deteriorate or are breached enough to allow the cliff to retreat naturally in-land, the creation of additional rocky shore habitat may be possible at the northern end of the PU. This will benefit European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI. Conservation objectives of the SPA will be fully supported.	Significant Positive (++) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Natural processes able to take place with this option (as they do now). Therefore there will be no affect on the Maritime Cliffs and Slopes BAP habitat found in the PU.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	Sewers serving properties on Percy Gardens and the wider Tynemouth area could be damaged. This could lead to large increases in the amount of untreated waste water discharging into the sea. Some or all water quality targets may be compromised.	Significant Negative (- -) P, I
9. Protect and enhance existing and proposed land uses.	This option is not likely to have an impact on any regeneration works.	Neural (o)

Objective	Potential effects	Significance of effects
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have a long term negative effect on visual amenity and landscape character associated with the deterioration of defence structures.	Significant Negative (- -) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	At the southern end of the PU part of the Tynemouth Priory and Castle SAM area could be lost due to erosion.	Significant Negative (- -) P, D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	Percy Gardens (a historic asset of local interest) would potentially be lost to the sea through erosion. No known archaeological find spots are likely to be lost. Some unknown archaeology may also be lost or on the other hand there is potential for it to be revealed.	Significant Negative (- -) P, D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	Partial loss of iconic historic assets (Tynemouth Priory and Castle earthworks) is likely to result in a permanent alteration to the historic landscape. The deterioration of existing defence structures and collapse of buildings would also have a negative impact. The Tynemouth Conservation Area would be adversely affected.	Significant Negative (- -) P, D
14. Protect and seek to enhance sites designated for their geological interest.	This option would not have an effect on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

PU 11 Option 1 – do minimum

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Reactive repair of the existing defence structures is unlikely to result in any change to the number of people and properties at risk of erosion and/or flooding. The lifeguard hut located on the beach would remain at risk.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Reactive repair could result in the temporary obstruction of several PRoWs and a defence structure which also functions as a promenade. Access via a number of steps or the ramp could be restricted if the defences are left to a point where they fail.	Minor Negative (-) T (St) , I
3. Support the local economy through protection of assets related to the tourism industry.	The option would not change the number of tourist assets at risk.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing/port based activities in this PU.	Neural (o)

Objective	Potential effects	Significance of effects
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Sea Banks (the coastal road) is unlikely to be affected by this option.	Neural (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA will not be fully supported.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Natural processes able to take place with this option (as they do now). Therefore there will be no affect on the Maritime Cliffs and Slopes BAP habitat found in the PU.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	Sewers serving properties on Percy Gardens and the wider Tynemouth area could be damaged. This could lead to large increases in the amount of untreated waste water discharging into the sea. Some or all water quality targets may be compromised.	Significant Negative (- -) P, I
9. Protect and enhance existing and proposed land uses.	This option is not likely to have an impact on any regeneration works.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have a long term negative effect on visual amenity and landscape character associated with the deterioration of defence structures.	Significant Negative (- -) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	At the southern end of the PU part of the Tynemouth Priory and Castle SAM area could be lost due to erosion.	Significant Negative (- -) P, D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	This option is unlikely to have an impact on non-designated historic assets of local interest.	Neural (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	Partial loss of iconic historic assets (Tynemouth Priory and Castle earthworks) is likely to result in a permanent alteration to the historic landscape. The deterioration of existing defence structures and collapse of buildings would also have a negative impact. The Tynemouth Conservation Area would be adversely affected.	Significant Negative (- -) P, D
14. Protect and seek to enhance sites designated for their geological interest.	This option would not have an effect on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

PU 11 Option 2 – maintain

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Proactive maintenance of the existing defence structures is unlikely to result in any change to the number of people and properties at risk of erosion and/or flooding. The lifeguard hut located on the beach would remain at risk.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Proactive maintenance could result in the temporary obstruction of several PRoWs and a defence structure which also functions as a promenade. Access via a number of steps or the ramp could be restricted as the existing defences become less effective against climate change and associated sea level rise.	Minor Negative (-) T (St) , I
3. Support the local economy through protection of assets related to the tourism industry.	The option would not change the number of tourist assets at risk.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing/port based activities in this PU.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Sea Banks (the coastal road) is unlikely to be affected by this option.	Neural (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	Proactive maintenance of the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA will not be fully supported.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Natural processes will be able to take place with this option (as they do now). Therefore there will be no affect on the Maritime Cliffs and Slopes BAP habitat found in the PU.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is not likely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neural (o)
9. Protect and enhance existing and proposed land uses.	This option is not likely to have an impact on any regeneration works.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option is unlikely to have a negative impact on visual amenity.	Neural (o)

Objective	Potential effects	Significance of effects
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	At the southern end of the PU part of the Tynemouth Priory and Castle SAM area could be lost due to erosion (currently undefended).	Significant Negative (- -) P, D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	This option is unlikely to have an impact on non-designated historic assets of local interest.	Neural (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	Partial loss of iconic historic assets (Tynemouth Priory and Castle earthworks) is likely to result in a permanent alteration to the historic landscape. The Tynemouth Conservation Area would be adversely affected.	Significant Negative (- -) P, D
14. Protect and seek to enhance sites designated for their geological interest.	This option would not have an effect on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

F.12 Policy Unit 12: Tynemouth Headland (SMP 26.7)

PU 12 Option 0 – do nothing (baseline)

Objective	Effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	This option is not likely to result in any change to the amount of people and properties at risk of coastal erosion during the strategy timeframe. Flooding is not an issue due to the high ground.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option would not improve or restrict public access to open space or the countryside.	Neural (o)
3. Support the local economy through protection of assets related to the tourism industry.	Tynemouth Priory and Castle is a major tourist attraction on the coast. There is high potential for landslips and rock falls which could make part of the site unsafe /inaccessible to visitors. This could also affect the Mouth of the Tyne Music Festival which is hosted in the grounds of the Priory and Castle.	Minor Negative (-) T (St), I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this Policy Unit.	Neural (o)

Objective	Effects	Significance of effects
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option is not likely to result in any change to the risk posed by flooding and coastal erosion on the transport infrastructure during the strategy timeframe.	Neural (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	The option will allow the whole of the PU coastline to retreat naturally in-land resulting in the creation of rocky shore habitat. This will benefit European protected species found within the Northumbria Coast SPA and nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA would be fully supported.	Significant Positive (++) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Erosion of the soft cliffs would lead to the temporary loss of Maritime Cliffs and Slops BAP habitat until new habitat develops on the landward side.	Minor Negative (-) T (St), I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors would be affected.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option will not have an impact on visual amenity.	Neural (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Tynemouth Priory and Castle is a Scheduled Ancient Monument. There are also a number of Listed Buildings (Grade II) in the grounds. There is high potential for landslips and rock falls on the headland; whist the structures are unlikely to be lost there is potential for some of the archaeology within the grounds to be lost under this option.	Significant Negative (- -) P, D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings at risk of erosion within the PU. The known archaeological sites are not at risk of permanent loss through coastal erosion. The potential for unknown buried archaeology on the headland however is high.	Neural (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option is unlikely to have an effect on the character of Tynemouth Conservation Area	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

PU 12 Option 1 – do minimum

Objective	Effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	This option is not likely to result in any change to the amount of people and properties at risk of coastal erosion during the strategy timeframe. Flooding is not an issue due to the high ground.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The option would not improve or restrict public access to open space or the countryside.	Neural (o)
3. Support the local economy through protection of assets related to the tourism industry.	Tynemouth Priory and Castle is a major tourist attraction on the coast. There is high potential for landslips and rock falls which could make part of the site unsafe /inaccessible to visitors. This could also affect the Mouth of the Tyne Music Festival which is hosted in the grounds of the Priory and Castle.	Minor Negative (-) T (St), I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this Policy Unit.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The option is not likely to result in any change to the risk posed by flooding and coastal erosion on the transport infrastructure during the strategy timeframe.	Neural (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	The option would not prevent the PU coastline from retreating naturally in-land however it would slow the rate of erosion down. Impacts on European protected species found within the Northumbria Coast SPA and nationally protected species within the Northumberland Shore SSSI are therefore unclear.	Uncertain Effects (?) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	The option is unlikely to have an impact on the Maritime Cliffs and Slops BAP habitat.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option would not change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors would be affected.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option will not have an impact on visual amenity.	Neural (o)

Objective	Effects	Significance of effects
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Tynemouth Priory and Castle is a Scheduled Ancient Monument. There are also a number of Listed Buildings (Grade II) in the grounds. There is high potential for landslips and rock falls on the headland; whist the structures are unlikely to be lost there is potential for some of the archaeology within the grounds to be lost under this option.	Significant Negative (- -) P, D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are no locally listed historic buildings at risk of erosion within the PU. The known archaeological sites are not at risk of permanent loss through coastal erosion. The potential for unknown buried archaeology on the headland however is high.	Neural (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option is unlikely to have an effect on the character of Tynemouth Conservation Area	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

F.13 Policy Unit 13: Tynemouth North Pier

PU 13 Option 0 – do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Deterioration of the North Pier could place a large number of people and properties at risk of flooding and/or erosion. These effects would be outside of the PU i.e. people and properties on the south side of the River Tyne (South Shields) and further down the River, including Fish Quay. The Tynemouth Sailing Club Hut in Priors Haven would be at particular risk from flooding and erosion.	Significant Negative (- -) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Deterioration of the revetment on the north side of Priors Haven and collapse of the North Pier could result in the loss a PRoW. The Pier is a popular place for sea anglers and it provides protection for other forms of sea based recreation including sailing, rowing and kayaking. Loss of the structure would have a negative impact on these forms of recreation. The Tynemouth Sailing Club Hut could be lost.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	The North Pier (and Lighthouse) is an iconic structure on the coast and open for visitors to walk along (free). Under this option this attraction would be lost.	Minor Negative (-) P, I

Objective	Potential effects	Significance of effects
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The North Pier provides protection to boats entering and exiting the River Tyne in stormy conditions. Loss of the structure could have significant negative impacts on both the fishing and port based industries, placing boats at risk of damage.	Significant Negative (- -) P, I
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Loss of the North Pier could exacerbate flooding issues further down the River Tyne (i.e. in the Fish Quay area) and outside of the strategy area. From the level of information available, the impact this option would have on this objective is uncertain.	Uncertain (?) P, Sy
6. Protect and seek to enhance sites designated for their nature conservation value.	Loss of the North Pier would accelerate erosion on the undefended headland south of Priors Haven resulting in the creation of additional rocky shore habitat. This will benefit European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI. The North Pier structure however is used by protected species for roosting during high tide. The loss of the structure would go against targets for achieving favourable condition of the SPA.	Multiple Effects +/- (?) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are no BAP habitats within the PU.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is unlikely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neural (o)
9. Protect and enhance existing and proposed land uses.	Loss of the North Pier is likely have an impact on proposed development works further down the River Tyne. This includes developments associated with the expansion of the Port and related activities.	Significant Negative (- -) P, D
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have a long term negative effect on visual amenity and landscape character associated with the deterioration of defence structures.	Significant Negative (- -) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	This option would result in the direct loss of a listed structure, the North Pier (Grade II). Designated historic buildings at South Shields would be more vulnerable to flooding and/or erosion i.e. The Roman Fort SAM.	Significant Negative (- -) P, D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Tynemouth Sailing Club Hut (a historic asset of local interest) would potentially be lost to the sea through erosion and affected by flooding. No known archaeological find spots are likely to be lost. Some unknown archaeology may also be lost or on the other hand there is potential for it to be revealed.	Significant Negative (- -) P, D

Objective	Potential effects	Significance of effects
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	Loss of an iconic historic asset (the North Pier) is likely to result in a permanent alteration to the historic landscape. The Tynemouth Conservation Area would be adversely affected.	Significant Negative (- -) P, D
14. Protect and seek to enhance sites designated for their geological interest.	This option would not have an effect on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

PU 13 Option 1 – do minimum

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Reactive maintenance of the North Pier could place a large number of people and properties at a temporary risk of flooding and/or erosion if the defences fail. These effects would be outside of the PU i.e. people and properties on the south side of the River Tyne (South Shields) and further down the River, including Fish Quay. The Tynemouth Sailing Club Hut in Priors Haven would be at particular risk from flooding and erosion due to the in direct protection the Pier provides to the bay.	Significant Negative (- -) T (St), I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Reactive maintenance of the revetment on the north side of Priors Haven and of the North Pier could result in temporary obstructions on the PRoW if either of these defences fail. The Pier is a popular place for sea anglers and it provides protection for other forms of sea based recreation including sailing, rowing and kayaking. Damage to the structure would have a temporary negative impact on these forms of recreation. The Tynemouth Sailing Club Hut could be temporarily more vulnerable to flooding.	Minor Negative (-) T (St), I
3. Support the local economy through protection of assets related to the tourism industry.	The North Pier (and Lighthouse) is an iconic structure on the coast and open for visitors to walk along. Under this option this attraction could be temporarily obstructed, either because of the defence failing or due to poor repair.	Minor Negative (-) T (St), I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The North Pier provides protection to boats entering and exiting the River Tyne in stormy conditions. If the defence was left to a point where it failed there could be significant temporary negative impacts on both the fishing and port based industries, placing boats at risk of damage.	Minor Negative (-) T (St), I
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Leaving the North Pier to a point where it failed could temporarily exacerbate flooding issues further down the River Tyne (i.e. in the Fish Quay area) and outside of the strategy area. From the level of information available the impact this option would have on this objective is uncertain.	Uncertain (?) T (St), Sy

Objective	Potential effects	Significance of effects
6. Protect and seek to enhance sites designated for their nature conservation value.	The North Pier structure is used by European protected species for roosting during high tide. If the structure was left to a point where it failed some of these roost sites could be temporarily lost. This would have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species found within the Northumberland Shore SSSI.	Minor Negative (-) T(St), D
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are no BAP habitats within the PU.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is unlikely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neural (o)
9. Protect and enhance existing and proposed land uses.	Reactive repair of the North Pier could have a temporary impact on proposed development works further down the River Tyne. This includes developments associated with the expansion of the Port and related activities.	Minor Negative (-) T (St), I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option would have a medium term negative effect on visual amenity and landscape character associated with the deterioration of defence structures.	Minor Negative (-) T (Mt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	This option would result in the deterioration of a listed structure, the North Pier (Grade II), to a point where it failed. Sections could be lost. Designated historic buildings at South Shields could be temporarily more vulnerable to flooding and/or erosion i.e. The Roman Fort SAM.	Significant Negative (- -) P, D
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Tynemouth Sailing Club Hut (a historic asset of local interest) could potentially be a more risk of erosion and flooding if the North Pier was left to a point where is failed. No known archaeological find spots are likely to be lost. Some unknown archaeology may also be lost or on the other hand there is potential for it to be revealed.	Minor Negative (-) T (St), D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Tynemouth Conservation Area is unlikely to be affected by this option.	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	This option would not have an effect on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

PU 13 Option 2 – maintain

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	The effects of climate change and sea level rise could increase events of overtopping on the pier. As the pier does not provide direct protection to people and properties from the risks of flooding this option is assessed as neutral.	Neural (o)
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Although the risk of flooding would increase for the Tynemouth Sailing Club with climate change the Pier does not provide direct protection against this. The option is therefore assessed as neutral.	Neural (o)
3. Support the local economy through protection of assets related to the tourism industry.	The option would not result in any change to the number of tourism assets at risk within the PU.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	Proactive maintenance of the North Pier will ensure the protection it provides to boats entering and exiting the River Tyne in stormy conditions is maintained.	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Risk of flooding may increase with climate change for assets further down the coast however the North Pier does not provide direct protection effects of this option are assessed as neutral.	Neural (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	The North Pier structure would continue to be used by European protected species for roosting during high tide under this option.	Neural (o)
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are no BAP habitats within the PU.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is unlikely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neural (o)
9. Protect and enhance existing and proposed land uses.	Risk of flooding may increase with climate change for assets further down the coast however the North Pier does not provide direct protection effects of this option are assessed as neutral.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	This option is unlikely to have an effect on visual amenity.	Neural (o)

Objective	Potential effects	Significance of effects
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	This option would maintain a listed structure, the North Pier (Grade II), Designated historic buildings at South Shields could be more vulnerable to flooding with climate change i.e. The Roman Fort SAM.	Minor Negative (-) P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Tynemouth Sailing Club Hut (a historic asset of local interest) could potentially be at more risk of flooding under this option due climate change. However as the North Pier does not provide direction protection to this asset the option is assessed as neutral.	Neural (o)
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Tynemouth Conservation Area is unlikely to be affected by this option.	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	This option would not have an effect on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

F.14 Policy Unit 14: Prior's Haven (SMP 27.1)

PU 14 Option 0 – do nothing (baseline)

Objective	Effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	This option is likely to result in a small increase to the amount of people and properties at risk of coastal flooding during the strategy timeframe (i.e. the Tynemouth Sailing Club Building) due to the effects of climate change.	Minor Negative (-) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	The Tynemouth Sailing Club operate from Prior's haven and their assets would be at risk under this option do to the effects of climate change. This form of recreation could be compromised. Some PRoW leading onto the beach could be lost due to erosion.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	Loss of the car park above Priors Haven under this option would have a negative impact on the Tynemouth Classic VW Rally. Another site would need to be found.	Minor Negative (-) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	There are no fishing and/or port based commercial assets within this Policy Unit.	Neural (o)

Objective	Effects	Significance of effects
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	The car park which sits on the headland to the south and above Prior's Haven would be at risk of erosion. The access road which leads to the car park and several houses would also be at risk.	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	The option will allow the coastline to retreat naturally in-land resulting in the creation of new sandy/boulder and cobble beaches. This will benefit nationally protected species within the Northumberland Shore SSSI.	Significant Positive (++) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are no BAP habitats in this PU.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The local drainage/sewer infrastructure serving properties on Pier Road could be lost due to erosion. This could change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors will be affected.	Significant Negative (- -) P, I
9. Protect and enhance existing and proposed land uses.	The option does not conflict with or obstruct any proposed development or regeneration activities.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	There will be a negative impact on visual amenity associated with the buildings and infrastructure falling into the sea.	Minor Negative (-) T (St), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	There are no nationally designated historic assets within the PU and the Listed Buildings within close proximity are unlikely to have their setting affected.	Neural (o)
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	The Tynemouth Sailing Club Hut (a historic asset of local interest) could be at an increased risk of erosion and flooding with climate change. The known archaeological sites are not at risk of permanent loss through coastal erosion. The potential for unknown buried archaeology within/on the cliffs is low.	Minor Negative (-) P (Lt), I
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The option is unlikely to have an effect on the character of Tynemouth Conservation Area	Neural (o)
14. Protect and seek to enhance sites designated for their geological interest.	There are no likely effects on the Tynemouth to Seaton Sluice SSSI.	Neural (o)

F.15 Policy Unit 15: Tynemouth (The Flats) (SMP 27.2)

PU 15 Option 0 - do nothing (baseline)

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Several additional properties would be at an increased risk of coastal erosion under this option. This would include properties on Freestone Point (i.e. the Watch House Museum) and commercial units at Low Lights/the Fish Quay. Flooding already experienced at Union Quay would be exacerbated and more properties would be affected.	Significant Negative (- -) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Loss of the defences at The Flats will result in erosion of several PRoW and the Tynemouth to Shields Promenade. The National Cycle trail which uses the promenade would be lost.	Significant Negative (- -) P, I
3. Support the local economy through protection of assets related to the tourism industry.	The Watch House Museum (Tynemouth Volunteer Life Brigade) would be lost through erosion under this option.	Significant Negative (- -) P, I
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The Gut (Fish Quay) is a working quay and one of England's largest prawn ports. Loss of defences east of the quay could put more pressure on the parts of the landing structure. Access to the port via Clifford St could be cut off.	Significant Negative (- -) P, I
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Union Quay, Bell St and Union Road currently fall within the EAs flood risk zone. Flooding would be worse under this option and extend further up Union Road, increasing the length of transport infrastructure affected. Parts of Clifford St and the Car Park off it would be lost due to erosion.	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	The option will allow the whole of the PU coastline to retreat naturally in-land resulting in the creation of rocky shore habitat and boulder and cobble beaches. This will benefit European protected species found within the Northumbria Coast SPA and nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA would be fully supported.	Significant Positive (++) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Natural erosion of the cliffs will lead to the creation of new LBAP Estuary and Coastal Habitat, reducing the issue of coastal squeeze with sea level rise.	Minor Positive (+) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The local drainage/sewer infrastructure serving properties on Clifford Street could be lost due to erosion. This could change the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors will be affected.	Significant Negative (- -) P, I

Objective	Potential effects	Significance of effects
9. Protect and enhance existing and proposed land uses.	The TVLB building has recently been restored through a HLF grant. Under this option this building would be lost due to erosion. The Fish Quay area has been subject to a £1m upgrade which has included refurbishment to buildings at Clifford's Fort. These buildings would be at risk of erosion under this option.	Significant Negative (- -) P, I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	There would be a large negative impact on visual amenity with this option associated with the deterioration of the existing coastal defences and buildings left to collapse into the sea/river.	Significant Negative (- -) P, I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	There are numerous designated historic assets in this PU including Clifford's Fort SAM, Clifford's Fort Building (Grade II* listed) and the Collingwood Monument (Grade II* listed). Designated sites and buildings at Clifford's Fort could be lost under this option due to erosion as would some buildings on Freestone Point.	Significant Negative (- -) P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are a number of locally listed historic buildings within the Policy Unit i.e. the Fishermans Mission, Quay Master Office, Knott Memorial Flats and Old Coastguard Cottages. Some of these sites would be at risk from flooding and erosion. Known archaeological sites would be at risk from coastal erosion and permanent loss. There is potential for unknown buried archaeology within the cliffs and this would be at risk from erosion.	Significant Negative (- -) P, D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	There Fish Quay and Tynemouth Conservation Areas fall within this PU. Loss of iconic buildings under this option will have a significant negative effect.	Significant Negative (- -) P, D
14. Protect and seek to enhance sites designated for their geological interest.	There are no sights designated for their geological interest in this PU	Neural (o)

PU 15 Option 1 - do minimum

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Reactive repair would place a small number of properties at temporary risk of coastal erosion and flooding under this option. This would mainly include commercial units at Low Lights/the Fish Quay. Flooding already experienced at Union Quay would be exacerbated due to climate change and more properties would be affected.	Significant Negative (- -) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	Reactive repair of the defences at The Flats could result in the temporary obstruction of several PRoW along and leading off the Tynemouth to Shields Promenade. The National Cycle trail which uses the promenade could be temporarily obstructed if the defences were left to a point where they fail.	Minor Negative (-) T (St), I

Objective	Potential effects	Significance of effects
3. Support the local economy through protection of assets related to the tourism industry.	There are unlikely to be any effects on assets related to the tourist industry with this option.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The Gut (Fish Quay) is a working quay and one of England's largest prawn ports. Deterioration of defences east of the quay, to a point where they fail, could put more pressure/cause damage to parts of the landing structure.	Minor Negative (-) P, I
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Union Quay, Bell St and Union Road currently fall within the EAs flood risk zone. Flooding would be worse under this option and extend further up Union Road if defences were left to a point where they fail. The effects of climate change would exacerbate the flooding. The length of transport infrastructure affected would increase.	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA will not be fully supported.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any effects on LBAP Estuary and Coastal Habitat under this option.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is unlikely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The Fish Quay area has been subject to a £1m upgrade which has included refurbishment to buildings at Clifford's Fort. The effects of climate change and sea level rise could place these buildings at risk of flooding.	Minor Negative (-) T (St), I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	There would be a large negative impact on visual amenity with this option associated with the deterioration of the existing coastal defences left to a point where they fail.	Minor Negative (-) T (Lt), I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Designated sites and buildings at Clifford's Fort could be at risk of flooding under this option due to the effects of climate change and sea level rise i.e. Cifford's Fort SAM, Clifford's Fort Building (Grade II* listed).	Minor Negative (-) T (St), I

Objective	Potential effects	Significance of effects
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are a number of locally listed historic buildings within the Policy Unit i.e. the Fishermans Mission, Quay Master Office, Knott Memorial Flatts and Old Coastguard Cottages. Some of these sites would be at risk from flooding due to the effects of climate change.	Minor Negative (-) T (St), D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Fish Quay and Tynemouth Conservation Areas fall within this PU. Flooding of iconic buildings in the Clifford's Fort area could have a negative impact on these areas.	Minor Negative (-) T (St), D
14. Protect and seek to enhance sites designated for their geological interest.	There are no sights designated for their geological interest in this PU	Neural (o)

PU 15 Option 2 - maintain

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	Proactive maintenance would place a small number of properties at risk of flooding under this option due to the effects of climate change. This would mainly include commercial units at Low Lights/the Fish Quay.	Minor Negative (-) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	There are unlikely to be any effects on recreational resources.	Neural (o)
3. Support the local economy through protection of assets related to the tourism industry.	There are unlikely to be any effects on assets related to the tourist industry with this option.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The Gut (Fish Quay) is a working quay and one of England's largest prawn ports. There are unlikely to be any effects associated with this option (this area will remain at risk of flooding).	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Union Quay, Bell St and Union Road currently fall within the EAs flood risk zone. Flooding would be worse under this option and extend further up Union Road with the effects of climate change The length of transport infrastructure affected would increase.	Significant Negative (- -) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA will not be fully supported.	Significant Negative (- -) P, I

Objective	Potential effects	Significance of effects
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	There are unlikely to be any effects on LBAP Estuary and Coastal Habitat under this option.	Neural (o)
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is unlikely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neural (o)
9. Protect and enhance existing and proposed land uses.	The Fish Quay area has been subject to a £1m upgrade which has included refurbishment to buildings at Clifford's Fort. The effects of climate change and sea level rise could place these buildings at risk of flooding.	Minor Negative (-) T (St), I
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	There are no likely effects on visual amenity under this option.	Neural (o)
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Designated sites and buildings at Clifford's Fort could be at risk of flooding under this option due to the effects of climate change and sea level rise i.e. Cifford's Fort SAM, Clifford's Fort Building (Grade II* listed).	Minor Negative (-) T (St), I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are a number of locally listed historic buildings within the Policy Unit i.e. the Fishermans Mission, Quay Master Office, Knott Memorial Flatts and Old Coastguard Cottages. Some of these sites would be at risk from flooding due to the effects of climate change.	Minor Negative (-) T (St), D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The Fish Quay and Tynemouth Conservation Areas fall within this PU. Flooding (due to climate change) of iconic buildings in the Clifford's Fort area could have a negative impact on these areas.	Minor Negative (-) T (St), D
14. Protect and seek to enhance sites designated for their geological interest.	There are no sights designated for their geological interest in this PU	Neural (o)

PU 15 Option 3 - sustain

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	There would be no change to the number of people and properties at risk of flooding and/or coastal erosion under this option.	Neural (o)

Objective	Potential effects	Significance of effects
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	There are unlikely to be any effects on recreational resources.	Neural (o)
3. Support the local economy through protection of assets related to the tourism industry.	There are unlikely to be any effects on assets related to the tourist industry with this option.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The Gut (Fish Quay) is a working quay and one of England's largest prawn ports. There are unlikely to be any effects associated with this option (this area will remain at risk of flooding).	Neural (o)
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Union Quay, Bell St and Union Road currently fall within the EAs flood risk zone. Flooding risk would remain under this option but not worsen with climate change	Neural (o)
6. Protect and seek to enhance sites designated for their nature conservation value.	Reactive repair to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA will not be fully supported.	Significant Negative (- -) P, I
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Raising the sea walls may involve some encroachment into LBAP Estuary and Coastal Habitat under this option. This habitat would be lost.	Significant Negative (- -) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is unlikely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neural (o)
9. Protect and enhance existing and proposed land uses.	There would be no effects on existing and proposed land uses under this option.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	Raising sea walls could have a negative impact on visual amenity.	Significant Negative (- -) P, I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Raising sea walls and the height of the quay could have a negative effect on the setting of Designated sites and buildings at Clifford's Fort i.e. Cifford's Fort SAM, Clifford's Fort Building (Grade II* listed).	Minor Negative (-) P, I

Objective	Potential effects	Significance of effects
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are a number of locally listed historic buildings within the Policy Unit i.e. the Fishermans Mission, Quay Master Office, Knott Memorial Flatts and Old Coastguard Cottages. Raising sea walls and the height of the quay could have a negative effect on the setting of these sites.	Minor Negative (-) P,D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The introduction of high sea walls could have a negative impact on the Fish Quay and Tynemouth Conservation Areas which fall within this PU.	Minor Negative (-) P, D
14. Protect and seek to enhance sites designated for their geological interest.	There are no sights designated for their geological interest in this PU	Neural (o)

PU 15 Option 3 - Improve

Objective	Potential effects	Significance of effects
1. Ensure people and property are protected against coastal erosion and flooding risk.	The option would result in a large permanent decrease in the number of people and properties at risk or affected by flooding in the Fish Quay area.	Significant Positive (++) P, I
2. Promote good health and well being through the provision of, and access to, coastal recreational resources.	There are unlikely to be any effects on recreational resources.	Neural (o)
3. Support the local economy through protection of assets related to the tourism industry.	There are unlikely to be any effects on assets related to the tourist industry with this option.	Neural (o)
4. Recognise and support the role of the fishing and port based industries when considering coastal defence options.	The Gut (Fish Quay) is a working quay and one of England's largest prawn ports. This area will benefit from this option which would reduce the risk of flooding.	Significant Positive (++) P, I
5. Ensure that the transport infrastructure is protected from coastal change and flooding risk.	Union Quay, Bell St and Union Road currently fall within the EAs flood risk zone. Flooding risk would reduce under this option. The length of transport infrastructure affected would reduce.	Significant Positive (++) P, I
6. Protect and seek to enhance sites designated for their nature conservation value.	Improvements to the existing defences will prevent the coast from naturally retreating in-land. Effects of coastal squeeze associated with sea level rise will result in the loss of rocky shore. This will have a negative effect on European protected species found within the Northumbria Coast SPA and Nationally protected species within the Northumberland Shore SSSI. Conservation objectives of the SPA will not be fully supported.	Significant Negative (- -) P, I

Objective	Potential effects	Significance of effects
7. Look at opportunities to improve the biodiversity and ecological value of sites through coastal defence management.	Raising the sea walls may involve some encroachment into LBAP Estuary and Coastal Habitat under this option. This habitat would be lost.	Significant Negative (- -) P, I
8. Minimise pollution to coastal and surface waters and ensure targets established by the WBD and WFD are not compromised.	The option is unlikely to change the amount of waste water, surface runoff and/or pollutant discharges.	Neural (o)
9. Protect and enhance existing and proposed land uses.	There would be no effects on existing and proposed land uses under this option.	Neural (o)
10. Protect and enhance landscapes and seascapes though sympathetic coastal defence management.	Raising sea walls could have a negative impact on visual amenity however the effects would be largely dependent upon implementation.	Significant Negative (- -) P, I
11 .Conserve and seek to enhance designated archaeological sites and historic buildings, including their setting and provision for access.	Raising sea walls and the height of the quay could have a negative effect on the setting of Designated sites and buildings at Clifford's Fort i.e. Cifford's Fort SAM, Clifford's Fort Building (Grade II* listed).	Minor Negative (-) P, I
12. Conserve and seek to enhance non-designated historic assets of local interest, including their setting and provision for access.	There are a number of locally listed historic buildings within the Policy Unit i.e. the Fishermans Mission, Quay Master Office, Knott Memorial Flatts and Old Coastguard Cottages. Raising sea walls and the height of the quay could have a negative effect on the setting of these sites.	Minor Negative (-) P,D
13. Maintain and where possible, enhance the distinctiveness and historic character of local settlement.	The introduction of high sea walls could have a negative impact on the Fish Quay and Tynemouth Conservation Areas which fall within this PU.	Minor Negative (-) P, D
14. Protect and seek to enhance sites designated for their geological interest.	There are no sights designated for their geological interest in this PU	Neural (o)

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